Scientific Programme

Wednesday, 30 October 2019

Opening & Closing Sessions
08:00 - 09:00  Grand Ballroom

President's Welcome Opening Lecture

Chairs:
Chair: Kim Donaghue (Australia)
Chair: Lori Laffel (United States)
Chair: Joseph Wolfsdorf (United States)

Pediatric Diabetes: Meeting the Challenges - by the ISPAD 2019 Prize of Achievement awardee
Speaker: Georgeanna J. Klingensmith (United States)

Plenary Session
09:00 - 10:30  Grand Ballroom

Plenary Session I, Beta Cells: Past, Present, and Future

Chairs:
Chair: Lori Laffel (United States)
Chair: David Dunger (United Kingdom)

Lessons Learned from NPod: A New Understanding of Type 1 Diabetes  09:00 - 09:45
Speaker: Mark Atkinson (United States)

Discoveries attributing a role for the pancreas...or perhaps more appropriately the islet β-cells to the disorder now referred to as type 1 diabetes form a remarkable story from a historical perspective. From the basic anatomical and cellular biology efforts that began in the mid-1800s to studies of today where single islet endocrine cells are undergoing genomic, proteomic, and epigenetic analysis, much has been learned regarding this organ, its component tissues, as well as the immune system constituents for their contributions to the pathogenesis of this disease. Indeed, we have come far from the studies of Schmidt in 1902 noting a small peri-islet cellular infiltrate within the pancreas of a 10-year-old child with diabetes mellitus, which clearly formed a hallmark event. In the time since, amongst the most noteworthy findings of the 1900’s would surely include the association of type 1 diabetes with this infiltrate and young age of disease onset, a coining of the term “insulitis”, and correlating the lesion with a loss in islets containing β-cells which in turn, helped distinguish type 1 from type 2 diabetes......

Abstract is not shown completely because the length is exceeded

Creating Beta Cells for the Future Starting Today  09:45 - 10:30
Speaker: Doug Melton

Industry Exhibition
10:15 - 19:15  Back Bay

Exhibition
**Education Symposium – Implementing Technologies & Overcoming Barriers to Use**

**Chairs:**
Chair: Diana Naranjo (United States)
Chair: Anna Lindholm-Olinder (Sweden)

**Implementing Automated Insulin Delivery**
Speaker: Laurel H Messer (United States)
Automated Insulin Delivery (AID) devices include an insulin pump, a continuous glucose monitor, and an algorithm that automates a portion of insulin delivery. The goal of AID is to increase time spent in euglycemic range, while decreasing the cognitive burden of managing diabetes. AID devices represent a novel class of diabetes device, with many similarities but also important individual differences.

The objective of this talk is to outline fundamental ways that AID systems are different from traditional insulin pumps and sensors, and further highlight similarities and differences between devices using the CARES paradigm: Understanding how a system calculates insulin delivery, how to adjust insulin doses, when to revert to traditional insulin pump, key education points, and salient sensor and sharing capabilities of different systems. Current and future systems will be considered. The unique education required for successful use of AID systems will be highlighted, equipping clinicians and patients to use this new generation of devices optimally.

**Family Education: A Cornerstone to Success**
Speaker: Bärbel Aschemeier (Germany)
More and more children and adolescents around the world come down with type 1 diabetes (T1D) and have to redesign and arrange their lives. Suddenly there are new everyday stresses that influence the life of the family and the environment and lead to new challenges. The family must be able to perform the job as diabetes manager for the affected family member. They have to take over the function of the pancreas by providing insulin as physiologically as possible, to become specialists in handling technical equipment and are required as nutritionists during everyday life and as paramedics in emergency situations. The practice of these specific functions requires a comprehensive and intensive training of the whole family, not only at the time of T1D onset. Studies have shown that trained patients have a better metabolic control and, as a result, fewer complications. Thus, an interdisciplinary diabetes education is the prerequisite for an optimal lifelong treatment and metabolic status, of general health and quality of life of young patients with T1D and becomes an existential cornerstone of long-term diabetes therapy. In order to make the families to professionals as diabetes manager the goal must be to establish diabetes education for the whole family by providing evaluated trainings regarding disease process, nutritional management, physical activity, medications, glucose monitoring, technical issues and psychosocial adjustment by certified diabetes educator as well as with appropriately evaluated training material. Currently, the available training for healthcare professionals across the world who care for children and adolescents with T1D and their families is hugely variable. Training often does not exist or qualified training is not available, nor are they accredited and quality assured. Not just financial challenges and logistical requirements must be addressed to keep diabetes education as a cornerstone to success of diabetes care.
**Scientific Programme**

**Overcoming Barriers to Technology Uptake and Durable Use** 12:00 - 12:30
Speaker: Korey Hood (United States)

Rapid development of diabetes devices and digital health applications are not yet translating to optimal uptake. Given available technologies and devices and the widespread use of mobile technologies, what is getting in the way of optimal uptake? Researching answers to this question has been the focus of our work at Stanford University and the basic premise of our work is that human factors serve as major barriers to device uptake and durable use. These barriers represent modifiable targets for intervention and there are unique needs for youth with diabetes and their families. The objectives of this presentation are to: 1) briefly review barriers to device and technology uptake, 2) highlight ongoing efforts to address these barriers, and 3) leave the audience with practical strategies for optimizing uptake and durable use.

**Symposium**
11:00 - 12:30
**Constitution Ballroom**

**Clinical Science Symposium: Current Thinking about Microvascular Complications**

**Chairs:**
Chair: Farid Mahmud (Canada)
Chair: Dorothy J Becker (United States)

**Predicting, Preventing & Treating Renal Complications in Youth** 11:00 - 11:30
Speaker: Petter Bjornstad (United States)

**Predicting, Preventing & Treating Eye Complications in Youth** 11:30 - 12:00
Speaker: Jenny Sun (United States)

**Diagnosis and Management of Autonomic Neuropathy** 12:00 - 12:30
Speaker: Yoon Hi Cho (Australia)

Autonomic neuropathy is a major cause of morbidity in adults with type 1 diabetes, with significant prognostic implications on cardiovascular and all-cause mortality in this population. While autonomic neuropathy is known to occur in adolescents with type 1 diabetes, it may be subclinical, or present with non-specific symptoms which mimic other conditions. The reported prevalence of autonomic neuropathy in adolescents with type 1 diabetes is wide ranging in the literature, due to the variations in definitions, diagnostic methods and predominantly clinic-based data. The diagnostic method for autonomic neuropathy depends on the organ system being tested. The detection of cardiac autonomic neuropathy was traditionally based on heart rate and blood pressure responses to bedside dynamic manoeuvres, but more recently diagnosed by heart rate variability measures on a continuous ECG recording. Risk factors for autonomic neuropathy in the adolescent population include glycaemic factors, which include historical glycaemic control over a prolonged diabetes duration, and non-glycaemic factors, including obesity. Furthermore, autonomic neuropathy can be present early in the pathogenesis of other diabetes complications and may itself be a marker or risk factor for other diabetes complications; in particular, nephropathy. Further studies are required to evaluate the nature of these relationships, and the role of any targeted therapeutic interventions on autonomic neuropathy.
Scientific Programme

Oral Session
11:00 - 12:30

Republic Ballroom

Oral Session I, Epidemiology, Genetics, Immunology and the Environment: T1D and T2D

Chairs:
Chair: Wojciech Mlynarski (Poland)
Chair: Reinhard Holl (Germany)

11:00 - 11:12
Degree of β-cell impairment and its translation to clinically meaningful alterations in glycemia in obese youth from normal glucose tolerance (NGT) to prediabetes to type 2 diabetes (T2D)
Abstract Presenter: Joon Young Kim (United States)

11:12 - 11:24
Size for gestational age affects the risk of type 1 diabetes in children and adolescents: a Swedish national case-control study
Abstract Presenter: Nina Lindell (Sweden)

11:24 - 11:36
The appearance, dynamics, and natural fate of diabetes-associated autoantibodies in children with increased HLA-conferred disease susceptibility to type 1 diabetes: a 15-year follow-up
Abstract Presenter: Petra Maria Pöllänen (Finland)

11:36 - 11:48
Low 25-hydroxyvitamin D is associated with increased risk of type 1 diabetes, younger age of onset and more severe presentation
Abstract Presenter: Kate Miller (Australia)

11:48 - 12:00
Association of prodromal type 1 diabetes with school absenteeism: a population-based case-control study
Abstract Presenter: Niels Skipper (Denmark)

12:00 - 12:12
25 years of changing characteristics at diagnosis of type 1 diabetes (T1D) in children younger than 6 years
Abstract Presenter: Maryanne Quinn (United States)

12:12 - 12:24
Supporting teen problem-solving (STePS) intervention: reducing distress, preventing depression, and stabilizing glycemic control three years later
Abstract Presenter: Jill Weissberg-Benchell (United States)

Industry Satellite Symposium / Workshop
12:45 - 14:15

Constitution Ballroom

Satellite Symposium
Presentation

Industry Satellite Symposium / Workshop
12:45 - 14:15

Fairfax

Industry Workshop
Meetings
13:15 - 14:15
Room Hampton

Nurses Special Interest Group meeting

Poster Tour
14:30 - 15:30
Posters

PT02, Poster Tour 2 - Psychosocial Issues, Education, Nutrition, and Exercise

Chairs:
Chair: Susana Patton (United States)

- The sweet spot: moderate caregiver anxiety is associated with better glycemic control in youth with type 1 diabetes mellitus in Beirut, Lebanon
  Abstract Presenter: Camilia Kamoun (United States)

- Assessing eating disorders risk in youths with and without type 1 diabetes
  Abstract Presenter: Raquel Cecilia-Costa (Spain)

- Randomized controlled trial of an online coping intervention developed by and for parents of very young children with type 1 diabetes
  Abstract Presenter: Jessica Pierce (United States)

- A stepwise approach to psychosocial risk screening in children with type 1 diabetes in Ireland
  Abstract Presenter: Elena Hennessy (Ireland)

- The Getting Ready for Transition (GReaT) intervention programme: an evaluation of a family based multi-disciplinary intervention to support children with type 1 diabetes and their parents in the transition to secondary school in a UK tertiary paediatric diabetes service
  Abstract Presenter: Halina Flannery (United Kingdom)

- Access to psychological support and the psychological needs of young people with diabetes: a parent survey
  Abstract Presenter: Michael J Cornish (United Kingdom)

- A qualitative study investigating solution focus brief therapy in improving delivery of diabetes care by healthcare professionals
  Abstract Presenter: Sze May Ng (United Kingdom)

- The complexity of care and support in families with type 1 diabetes: Pre-teen and family perspectives on everyday life with diabetes and the transition from childhood to adolescence
  Abstract Presenter: Regitze Anne Saurbrey Pals (Denmark)

- Healthcare providers understanding of the psychosocial needs and experience of young children newly diagnosed with diabetes
  Abstract Presenter: Patricia DeCosta (Denmark)

- Identity and autonomy in pre-teenagers with T1D: balancing family involvement in the transition from childhood to adolescence
  Abstract Presenter: Dan Grabowski (Denmark)
Scientific Programme

PT03, Poster Tour 3 - Psychosocial Issues, Education, Nutrition, and Exercise

Chairs:
Chair: Katarzyna Anna Gajewska (Ireland)

- An exploratory study of how young people experience and perceive living with Type 1 diabetes during late adolescence and emerging adulthood
  Abstract Presenter: Marianne Vie Ingersgaard (Denmark)

- Stigma and discrimination as barriers for adolescent transition in type 1 diabetes (T1D) care
  Abstract Presenter: Joseph Leung (Canada)

- Occupational consequences and psychosocial burden among parents after diagnosis of type 1 diabetes (T1D) in their child: results of the German AMBA study
  Abstract Presenter: Karin Lange (Germany)

- Moderators of externalizing behavior in youth with type 1 diabetes (T1D)
  Abstract Presenter: Alexandra Monzon (United States)

- Converging themes on how to culturally adapt a validated preconception counseling (PC) program for adolescents with diabetes (DM) from three diverse groups: healthcare provider (HCP) perspective
  Abstract Presenter: Denise Charron-Prochownik (United States)

- Prevalence of obesity and prediabetes in adolescents and young adults in urban Ahmedabad
  Abstract Presenter: Vipul Chavda (India)

- Exploratory study: learning perception from children and adolescents with DM1 attending to an educational camp for the first time
  Abstract Presenter: Fernanda Nuñez (Chile)

- Evaluation of community-based education for dietetic students attending and assisting at a camp for children with diabetes
  Abstract Presenter: Ute Monika Hallbauer (South Africa)

- Assessment of school teachers' knowledge and competences on type 1 diabetes management
  Abstract Presenter: Maddalena Macedoni (Italy)

- The influence of psychosocial factors on the risk of eating disorders (ED) in youths with type 1 diabetes (T1D)
  Abstract Presenter: Raquel Cecilia-Costa (Spain)

PT07, Poster Tour 7 - Diabetes Epidemiology, Genetics, Immunology, and the Environment

Chairs:
Chair: Valentino Cherubini (Italy)
Scientific Programme

**The association between socioeconomic status and severity of diabetic ketoacidosis at onset of type 1 diabetes**
Abstract Presenter: Sando Ojukwu (United States)

**Type 2 diabetes in children in Kuwait: results from the Childhood-Onset Diabetes eRegistry (CODeR)**
Abstract Presenter: Hessa Al Kandari (Kuwait)

**Is low sun exposure during early life a risk factor for type 1 diabetes?**
Abstract Presenter: Kate Miller (Australia)

**Epidemiology and remission phase of type 1 diabetes mellitus in infants and toddlers**
Abstract Presenter: Kristina Podolakova (Slovakia)

**Real-world self-management behavior and glycemic status of pediatric and adolescent with diabetes**
Abstract Presenter: Tong Sheng (United States)

**Month of birth and risk of developing type 1 diabetes among children in the Swedish national diabetes cohort, the BDD-study**
Abstract Presenter: Emma Hedlund (Sweden)

**Well-being among Danish schoolchildren with and without type 1 diabetes: a population-based cohort study**
Abstract Presenter: Niels Skipper (Denmark)

**Incidence, clinical and biochemical features of type 1 diabetes in children and adolescents in the Republic of Maldives**
Abstract Presenter: Cecile Eigenmann (Australia)

**Recent loss of winter dominance in the incidence of T1D in children. Analysis of a register of 2252 cases recorded since 1973**
Abstract Presenter: Amel Zennaki (Algeria)

**Regional differences in glycemic control, hypoglycemia and disease management in adults with T1D: the SAGE study**
Abstract Presenter: Jochen Seufert (Germany)

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**PT01, Poster Tour 1 - Diabetes Acute and Chronic Complications**

**Chairs:**
Chair: Declan Cody (Ireland)

**Study of characteristics of children with diabetic ketoacidosis admitted to Intensive care unit in Alexandria University Children’s Hospital**
Abstract Presenter: Shaymaa Elsayed (Egypt)

**Are we administering adequate fluids to children and young people in diabetic ketoacidosis (DKA)? An audit of management of DKA at the Children’s Hospital for Wales**
Abstract Presenter: Prasad Adavappa Parvathamma (United Kingdom)
Scientific Programme

Conversation and Reactions Around Severe Hypoglycemia (CRASH Study): pediatric caregiver results
Abstract Presenter: Nan Zhang (United States)

Utility of plasma β-hydroxybutyrate for predicting diabetic ketoacidosis in the pediatric emergency department
Abstract Presenter: Elise Tremblay (United States)

Study of frequency and risk factors for Cerebral edema in 256 children with diabetic ketoacidosis
Abstract Presenter: Natasha Yaneva (Bulgaria)

Glycemic variability identified with continuous glucose monitoring (CGM) relates to hypoglycemia time < 70 mg/dL (3.9 mM) in children and adolescents with type 1 diabetes (T1D)
Abstract Presenter: Liane J. Tinsley (United States)

Impaired hypoglycemia awareness in children and adolescents with type 1 diabetes
Abstract Presenter: Anissa Messaaoui (Belgium)

Safety and efficacy of subcutaneous insulin for treatment of diabetic ketoacidosis in children - a systematic review
Abstract Presenter: Noémie Pothier (Canada)

A single-center study of initial clinical presentations affected by type 1 diabetes in Japan: severe DKA that was caused by delayed diagnosis, but was difficult to detect at the first visit
Abstract Presenter: Kouji Tagawa (Japan)

First description of LADY with DKA and in a male adolescent
Abstract Presenter: Gianluca Tornese (Italy)

Poster Tour
14:30 - 15:30

PT04, Poster Tour 4 - Diabetes Care and New Therapeutics

Chairs:
Chair: Ethel Codner (Chile)

Body composition and metabolic control in young women with type 1 diabetes (T1D) using long-acting reversible contraception (LARC) and combined oral contraceptive (COC)
Abstract Presenter: Franco Giraudo (Chile)

Glucose-independent racial disparity in HbA1c is present at onset of type 1 diabetes (T1D)
Abstract Presenter: Aqeel Alaqeel (United States)

Improved quality in diabetes care for children and adolescents with type 1 diabetes (T1D) in Norway. Data from the Norwegian Childhood Diabetes Registry (NCDR)
Abstract Presenter: Torild Skrivarhaug (Norway)

Medication adherence during adjunct therapy with statins and ACE inhibitors in adolescents with type 1 diabetes
Abstract Presenter: Elzbieta Niechcial (Poland)
Scientific Programme

Is effective transitional care worth investment in diabetes care?
Abstract Presenter: Alok Gupta (United Kingdom)

T1D glycaemic control and complications in Caucasian and non-Caucasian youth
Abstract Presenter: Júlia Galhardo (Portugal)

Pubertal self-assessment as a replacement for physical examination in adolescents with type 1 diabetes
Abstract Presenter: Ryan McDonough (United States)

Characteristics and outcomes of youth referred to a Diabetes Transition Program (DTP): need to continue to optimize support
Abstract Presenter: Ingrid Libman (United States)

When childcare isn’t sweet: challenges for very young children with type 1 diabetes
Abstract Presenter: Anastasia Albanese-O’Neill (United States)

HbA1c trajectories from time of diagnosis in youth with T1D
Abstract Presenter: Jennifer Sherr (United States)

Poster Tour
14:30 - 15:30

PT05, Poster Tour 5 - Diabetes Care and New Therapeutics

Chairs:
Chair: Stephen Greene (United Kingdom)

Glucose management indicator is individually assessed by the hemoglobin glycation phenotype using the ratio of glycated albumin to HbA1c
Abstract Presenter: Ikuma Musha (Japan)

Improving the transition to adult care for adolescents with type 1 diabetes: effect of transition readiness, self-efficacy and diabetes distress on glycemic control during transition
Abstract Presenter: Faisal Alwadiy (Canada)

National quality indicators and surveillance of staffing levels in paediatric diabetes care: a regional UK audit 2010-2018
Abstract Presenter: Margot Carson (United Kingdom)

Improving outcomes in type 1 diabetes: quality improvement [QI] the Sheffield Children’s Hospital, UK experience
Abstract Presenter: Carrie A MacKenzie (United Kingdom)

Gluten-free diet in children with recent onset type 1 diabetes: a 12 months intervention trial
Abstract Presenter: Vít Neuman (Czech Republic)

Efficacy, effectiveness, and tolerability of nasal glucagon in treating hypoglycemia in children and adolescents with Type 1 Diabetes
Abstract Presenter: Christopher Child (United States)

To participate in an improvement collaborative in a neighboring country - excellent results in metabolic control of pediatric type 1 diabetic patients
Abstract Presenter: Mari-Anne Pulkkinen (Finland)
Scientific Programme

Assessment of efficacy of elective hospital admissions for stabilisation of glycaemic control in children and adolescents with type 1 diabetes mellitus
Abstract Presenter: Gabby Atlas (Australia)

Glucose response curve (GRC) shapes in mixed meal tolerance tests (MMTTs) and prediction of response to intervention in the trialNet new-onset clinical trials
Abstract Presenter: Nourah Almutlaq (United States)

Insulin degludec is safe and effective in children with new-onset type 1 diabetes
Abstract Presenter: Nandu Thalange (United Arab Emirates)

Poster Tour
14:30 - 15:30

PT06, Poster Tour 6 - Telemedicine & Digital Support, Pumps & CGM, and Automated Insulin Delivery

Chairs:
Chair: Stuart Weinzimer (United States)

Flash Glucose Monitoring technology in the management of children and adolescents with type 1 diabetes leads to improved glycemic control
Abstract Presenter: Ioanna Kosteria (Greece)

A comparison between treatment with continuous insulin infusion and multiple daily injections in children and adolescents with type 1 diabetes in Sweden: data from the Swedish national quality register SWEDIABKIDS
Abstract Presenter: Anna-Lena Fureman (Sweden)

Flash glucose monitoring: lower sensor usage in children with poorer diabetes control
Abstract Presenter: Anissa Messaaoui (Belgium)

Successful use of continuous glucose monitoring to titrate an intravenous insulin infusion
Abstract Presenter: Vallimayil Velayutham (Australia)

Young children with type 1 diabetes (T1D) use continuous glucose monitors on a near daily basis
Abstract Presenter: Michelle Vannname (United States)

The use of insulin pumps and continuous glucose monitoring: does it make a difference? Data from the Norwegian Childhood Diabetes Registry
Abstract Presenter: Heiko Bratke (Norway)

Improvement in hypoglycemia outcomes in pediatric population using predictive low-glucose suspend (PLGS): basal-IQ system real-world data
Abstract Presenter: Jodie M. Ambrosino (United States)

Predictors of successful use of continuous glucose monitors in pediatric patients with type 1 diabetes
Abstract Presenter: Maura Sheehan (United States)

Publicly insured youth continue to use CGM up to 2 years following CGM initiation
Abstract Presenter: Priya Prahalad (United States)

Bolus and basal rate accuracy of two recently released insulin pumps
Abstract Presenter: Ralph Ziegler (Germany)
PT08, Poster Tour 8 - Childhood Obesity & Type 2 Diabetes, Associated Diseases, and Other Forms of Diabetes

Chairs:
Chair: Warren Lee (Singapore)

Bone turnover markers during the remission phase in children and adolescents with recent onset type 1 diabetes
Abstract Presenter: Jens Otto Broby Madsen (Denmark)

Prevalence and predictive factors for celiac disease in children after type 1 diabetes diagnose
Abstract Presenter: Marie Lindgren (Sweden)

Decreased bone turnover favoring bone resorption in children and adolescents with Type 1 diabetes after the remission phase
Abstract Presenter: Jens Otto Broby Madsen (Denmark)

The impact of celiac disease on clinical course in children with type 1 diabetes
Abstract Presenter: Anna Walldorf (Sweden)

Assessement of pyridoxial 5'- phosphate (PLP) in children newly diagnosed with type 1 diabetes mellitus
Abstract Presenter: Basma Ali (Egypt)

Type 1 Diabetes and epilepsy in childhood and adolescence: Do Glutamatic Acid Decarboxylase autoantibodies play a role? Data from the German/Austrian/Swiss and Luxembourgian DPV Registry
Abstract Presenter: Gideon John de Sousa (Germany)

Monogenic causes and associations of diabetes in a cohort of diabetic children: single center experience
Abstract Presenter: Ilknur Arslanoglu (Turkey)

Characteristics of monogenic diabetes registers within the ENDO-ERN network
Abstract Presenter: Stepanka Pruhova (Czech Republic)

Clinical and genetic characteristics of permanent neonatal diabetes mellitus in Beirut, Lebanon
Abstract Presenter: Hala Tfayli (Lebanon)

Prevalence of Maturity Onset Diabetes of the Young (MODY) among people with diabetes attending a tertiary care centre
Abstract Presenter: Moomin Hussain Bhat (India)

Late Breaking Posters on Display only

Use of text messaging to enhance BG monitoring and self-care in teens with type 1 diabetes: teens´ perceptions predict outcomes
Abstract Presenter: Emily Serata (United States)
Scientific Programme

Screening for diabetes distress among adolescents with diabetes: a better predictor for poor glycemic control
Abstract Presenter: K.M. Hong (United States)

Development of comorbid autoimmune diseases in children with type 1 diabetes
Abstract Presenter: Katherine Bigelow (United States)

Open hybrid closed loop insulin delivery systems in children and adults with type 1 diabetes - Polish experience
Abstract Presenter: Agnieszka Szypowska (Poland)

Endothelial and heart dysfunction in children and adolescents with type 1 diabetes
Abstract Presenter: Barbara Predieri (Italy)

Health care transition in youth with poorly controlled type 1 diabetes (T1D): qualitative analysis of pre-transition perspectives
Abstract Presenter: Elise Schlissel Tremblay (United States)

Continuous glucose monitoring and continuous insulin infusion via pump decrease diabetes related distress (DRD) and depression screening score in adolescents with type 1 diabetes
Abstract Presenter: Sunil Sinha (United States)

Role of pediatric diabetes team in providing safe fasting for type 1 diabetes during ramadan: Kuwait experience
Abstract Presenter: Fahed Al Jaser (Kuwait)

The impact of type 1 diabetes on daily life: insights from caregivers of minors with type 1 diabetes
Abstract Presenter: Jeoffrey Bispham (United States)

Directed differentiation of human intestinal organoids into the enteroendocrine lineage and insulin-expressing cells via small molecules
Abstract Presenter: Daniel Zeve (United States)

Neonatal diabetes caused by RFX6 mutations: barriers to follow-up management
Abstract Presenter: Carol Passone (Brazil)

Epidemiology and clinical characteristics of Cystic Fibrosis Related Diabetes in pediatric patients treated at a single institution
Abstract Presenter: Magdalena Mira (Chile)

User experience of flash glucose monitoring: a survey among Singaporean children with diabetes
Speaker: Xinyi Chin (Singapore)

Posters on Display
14:30 - 15:30

Posters on Display

Manipulation of capillary blood glucose meter readings, clinical cases and experimental trial
Abstract Presenter: Rossana Roman (Chile)
Insulin edema in a 14 year poor adolescent girl with type 1 diabetes mellitus due to surreptitious [but not therapeutic] self insulin use [project DISHA: receiving free medical care]
Abstract Presenter: Keerthana Haridas (India)

Examining the relationship between adolescent type 1 diabetes-specific quality of life and parent-adolescent communication
Abstract Presenter: Ella Tuohy (Ireland)

Diabetes at camp: resources for HCP education and technology integration
Abstract Presenter: Carla Cox (United States)

Long-term evolution of glycemic control in adolescents with T1D in persistent imbalance. Effect of intensive intervention and recovery education
Abstract Presenter: Amel Zennaki (Algeria)

Development of clinical data standards for Type 1 diabetes (T1D) by CDISC and T1D experts to promote data sharing and reuse
Abstract Presenter: John Owen (United States)

Community based research on malnutrition & diabetes: a cross section survey in children of urban slum of Surat (Gujarat)
Abstract Presenter: Paresh Surati (India)

Epidemiology and phenotype variation in young diabetes patients
Abstract Presenter: Shivani Arya (India)

Increasing coexistence of additional autoimmune diseases at diabetes type 1 onset among children and adolescents in Podlaskie Voivodeship (Poland) diagnosed in years 2010-2018
Abstract Presenter: Barbara Glowinska-Olszewska (Poland)

Screening for islet cell antibodies in non diabetic siblings of children with type i diabetes mellitus
Abstract Presenter: Basma Ali (Egypt)

A case of Wolfram syndrome with thyrosine phosphatase antibody
Abstract Presenter: Irina Eremina (Russian Federation)

Emerging phenotypes of the hyperosmolar hyperglycaemic state (HHS) in the paediatric population
Abstract Presenter: Edward Holloway (United Kingdom)

Severe hypertriglyceridemia shadowing diabetic ketoacidosis in type 1 diabetes mellitus
Abstract Presenter: Yasmine Abdelmeguid (Egypt)

The frequency of diabetic ketoacidosis at type 1 diabetes onset in a national incident cohort over a 5 year period
Abstract Presenter: Helen Fitzgerald (Ireland)

A case of Mauriac syndrome
Abstract Presenter: Omneya Magdy Omar (Egypt)

An old syndrome in modern times: a case of Mauriac syndrome
Abstract Presenter: Shahab Noorian (Iran, Islamic Republic of)

Longitudinal follow up for the association of microvascular complications in type 1 diabetes (T1DM)
Abstract Presenter: Manisha Gupta (India)
Scientific Programme

**Insulin port: experience in a chilean state hospital**
Abstract Presenter: Marta Arriaza (Chile)

**Fifty years of impressive growth and development of T1D care**
Abstract Presenter: Christos S. Bartsocas (Greece)

**Testing an audit and feedback intervention to improve glycemic control after transfer to adult diabetes care: protocol for a quasi-experimental pre-post design with a control group**
Abstract Presenter: Rayzel Shulman (Canada)

**Changes in body mass index and hemoglobin A1c over 5 years after diagnosis of type 1 and 2 diabetes mellitus in children and adolescents: observational study using common data model**
Abstract Presenter: Yun Jeong Lee (Korea, Republic of)

**Trends in prevalence of pediatric diabetes in in developing countries: the case study of Nepal**
Abstract Presenter: Rajati Sharma (Nepal)

**Starting benchmarking in Canada: which benefits for type 1 diabetes care?**
Abstract Presenter: Valérie Goettel (Canada)

**An analysis of North West London diabetes units using data from the National Paediatric Diabetes Audit 2017/2018**
Abstract Presenter: Caroline Alexiou (United Kingdom)

**A National Quality Programme in England and Wales - The quality improvement story so far**
Abstract Presenter: Megan Peng (United Kingdom)

**Evolution of the designs of the sitagliptin pediatric clinical studies**
Abstract Presenter: R. Ravi Shankar (United States)

**Changes observed during the screening period in patients enrolled in the sitagliptin clinical study MK-0431 P083**
Abstract Presenter: Carmen A. Rosario (Dominican Republic)

**Nerve conduction studies in patients with type 2 diabetes mellitus and its correlation with HbA1c**
Abstract Presenter: Shital Gupta (Nepal)

**Clinical profile of type 1 diabetes mellitus among children in western part of Nepal**
Abstract Presenter: Prish kanodia (Nepal)

**Roller coaster in the insulin requirements of a child with chronic kidney disease**
Abstract Presenter: Dina Fawzy (Egypt)

**Clinical profile of young diabetics attending a tertiary care hospital in South India**
Abstract Presenter: DON DAVID (India)

**Helplessness, hopelessness and self-destruction situation in a type 1 diabetes poor village family: successful transformation story to a united nations global art awardee, role model and a future doctor**
Abstract Presenter: Sathvik Reddy (India)

**Financial aspects of a type 1 diabetes program in Northern Haiti**
Abstract Presenter: Marc-Mesadieu Exavier (Haiti)
Usability testing of a web-based serious game for Brazilian children with type 1 diabetes (T1D)
Abstract Presenter: Valéria Cássia Sparapani (Brazil)

Glucose variability in east African children and youth with Type 1 Diabetes: A pilot study
Abstract Presenter: Lauren McClure (United States)

Blood pressure level increase with altitude in three argentinean indigenous communities
Abstract Presenter: Valeria Hirschler (Argentina)

Diabetes heroes - the power of knowledge: a web-based serious game for Brazilian children with type 1 diabetes (T1D)
Abstract Presenter: Valéria Cássia Sparapani (Brazil)

Predictive low-glucose suspend feature of insulin pump therapy reduces hypoglycemia during fasting in ramadan among adolescents with Type 1 Diabetes mellitus
Abstract Presenter: Nancy Elbarbary (Egypt)

E-health to support adolescents with type 1 diabetes
Abstract Presenter: Irén Tiberg (Sweden)

Continuous Glucose Monitoring System (CGMS) in well controlled children with type 1 diabetes
Abstract Presenter: Emilia Kowalczyk (Poland)

Metabolic control and variability in children with diabetes mellitus type 1 users of insulin infusion pump with predictive insulin suspension
Abstract Presenter: Francisca Riera (Chile)

Diagnosis of polyglandular autoimmune syndromes (PAS) in diabetic children and their siblings
Abstract Presenter: Iwona Ben-Skowronek (Poland)

Coexistence of medium chain acyl-CoA dehydrogenase deficiency (MCADD) and type 1 diabetes (T1D): a management challenge
Abstract Presenter: Juliana Chizo Agwu (United Kingdom)

Relationship between chronic pancreatitis and diabetes mellitus: a retrospective analysis of 200 ERCP investigations in diabetic patients
Abstract Presenter: Azka Athar (Pakistan)

Dual diagnosis of type 1 diabetes and ADHD
Abstract Presenter: Zohar Landau (Israel)

SLC29A3 spectrum disorder associated monogenic / syndromic insulin dependent diabetes: multiple tragedies and herculean management challenges of an enigmatic multisystem pathology
Abstract Presenter: Namya Gaekwad (India)

A girl with severe motor and intellectual disabilities who had hyperglycemic hyperosmolar syndrome associated with pancreatogenic diabetes mellitus
Abstract Presenter: Noriko Oyama (Japan)

Thiamine-responsive megaloblastic anemia related diabetes: long-term clinical outcomes in a large international case series from DPV and SWEET registries
Abstract Presenter: Daniele Pacaud (Canada)
MODY3 with obesity and nodular erythema
Abstract Presenter: Lyubov Zilberman (Russian Federation)

**Symposium**
15:45 - 17:15
Grand Ballroom

**Clinical Science Symposium: SGLT Inhibitors - Do they have a role in Pediatric Diabetes Care?**

**Chairs:**
Chair: Thomas Danne (Germany)
Chair: Elvira Isganaitis (United States)

**SGLTI’s: Mechanisms of Action and Potential for Use (T1D/T2D)**
Speaker: Bruce Perkins (Canada)

Sodium-Glucose Linked Transporter inhibition (SGLTI) represents an insulin-independent mechanism for glucose lowering of potential applicability in patients with type 1 diabetes as adjunct therapy to insulin. The primary mechanism of significance is the glucosuria induced by inhibition of the SGLT2 transporter in the proximal renal tubule. However, many other potential effects exist. For example, expression of SGLT exists in other tissues, including the SGLT2 subtype in the islet a-cell and the heart (cardiomyocytes and fibroblasts), or the SGLT1 subtype in the intestine. In totality, these transporters have functions that imply that their role as sodium-dependent glucose sensors are as important as the actual sodium-glucose cotransport. The mechanisms of action of the SGLTI, which ultimately appear to have metabolic, cardioprotective, and nephroprotective clinical benefits, can be divided into those primarily induced by glucosuria or those primarily induced by natriuresis. Glucosuria has the direct glucose-lowering benefits, induction of negative caloric balance that may reduce epicardial fat and the inflammatory and fibrotic processes associated with such fat, and promote urinary loss of uric acid. In addition, the shift from carbohydrate metabolism to fat metabolism induced by the glucosuria and caloric loss may invoke greater ketone substrate to heart and other tissues (the “thrifty substrate” hypothesis). The natriuresis reduces arterial stiffness and consequently blood pressure, reduces plasma volume and its effects on myocardial stretch without sympathetic activation, and, as one of the most well-defined mechanisms, normalizes renal tubuloglomerular feedback and therefore restores afferent arteriolar tone and intraglomerular pressure. In addition to the mechanisms directly linked to glucosuria and natriuresis, vasodilatory effects associated with hyperglucagonemia and hypoxia-related pathways may be relevant. In this talk, these mechanisms and their clinical relevance will be discussed, along with the mechanisms involved in ketone elevation with consideration for the safe clinical application of these medications in people with type 1 diabetes.
Central in the therapy of people with type 1 diabetes (T1D) is the replacement of all functions of the destroyed beta-cell. Simply put, the functions of the beta-cell cover continuous sensing of glycaemia followed by the release into the portal system of appropriate amounts of insulin, aimed at suppressing endogenous glucose production, lipolysis and protein catabolism. In recent years, better tools have become available to allow people with T1D to take over these complicated tasks of the beta-cell. Tools include novel glucose monitoring systems and supportive educational and decision making algorithms. Insulin analogues have been developed to mimic more closely the insulin excursions induced by a functioning beta-cell at mealtimes or during steady-state. However, several issues still exist with present day insulin therapy, with insufficient matching of insulin profiles to insulin needs resulting in many people with T1D not reaching HbA1c targets, gaining weight and suffering from recurrent hypoglycemia.

SGLT inhibitors, both specific SGLT2 and combined SGLT1/2 inhibitors reduce glucose levels in the blood through elimination via the urine and offer thus the possibility of use in T1D, as a functioning beta-cell is not required for achieving blood glucose lowering. Clinical trials have confirmed the potential and have shown (in adults with T1D) that robust lowering of HbA1c and in particular a stabilization of glucose curves, reflected by increases in Time in Range of 10% and above are observed, when using doses of SGLT inhibitors that block glucose reabsorption. This is accompanied by weight reduction (or less weight gain) and small reductions in blood pressure. No increase in hypoglycemia risk is observed, but the expected genital infection risk observed in people with type 2 diabetes is also present in T1D. The most worrisome observation is the increased risk of diabetic ketoacidosis (increased by 2-4 fold). The mechanism behind this increase is complex, with (inappropriate) insulin dose reductions and intercurrent illness being factors related to occurrence of DKA. Intensive education programs for users and medical teams are needed to mitigate this risk.

Clinical trials and practical tips on use of these agents in people with T1D will be discussed.
Benefits & Risks: What is the balance?

Speaker: Simeon Taylor (United States)

Sodium-glucose co-transporter inhibitors (SGLTi) offer benefits to type 2 diabetic patients – including glucose lowering, weight loss, blood pressure lowering, reduced risk of major adverse cardiovascular events, and slowed progression of diabetic kidney disease. These benefits must be balanced against multiple side effects observed with this class of drugs – including genitourinary infections, extracellular volume contraction, ketoacidosis, accelerated rate of bone loss, and increased risk of fractures. These drugs are not approved for use in children. Nor does the literature provide rigorous data on long term (e.g., >5 years) safety of these drugs in children or adults.

Because of high unmet medical need associated with type 1 diabetes (T1D), several clinical trials have assessed the efficacy and safety of SGLTi in combination with insulin in adult T1D patients. SGLT2i-treated T1D patients experienced a ~4% risk of ketoacidosis – i.e., a 5- to 10-fold increase in risk relative to patients treated with insulin alone. Thus, there would be ~4000 cases of ketoacidosis per year per 100,000 T1D patients treated with SGLTi. The published case mortality rate for diabetic ketoacidosis is ~0.4%, which would translate into ~16 deaths per 100,000 patient years of SGLT inhibitor exposure in T1D. As reviewed in a recent publication (Taylor et al, Lancet Diabetes Endocrinol, Oct. 2019), the mean incremental glycemic efficacy was only modest. Further, maximal efficacy (observed at ~8 wks) waned over the course of 52 weeks. It is not clear that the modest (and possibly transient) glycemic efficacy would provide the average patient with sufficient benefit to justify the increased risks of ketoacidosis and death. If there is a desire to further explore the possible utility of these drugs in T1D, future research might seek to identify a personalized medicine approach to select patients who would obtain above-average glycemic benefit and below average risk of developing ketoacidosis.
Beyond Carbohydrates for Insulin Management: Protein and Fat

Speaker: Olga Kordonouri (Germany)

Quality of food choice and mealtime routine influence significantly the treatment outcomes in type 1 diabetes (T1D). Although the carb-counting education has been globally established in T1D therapy, we do not have a common procedure for the management of protein- and fat-rich meals in youth with T1D. Both dietary protein and fat increase postprandial glucose excursions in an additive way leading to late postprandial insulin resistance. Furthermore, carb-centric education can lead to overconsumption of fat- and calorie-rich meals resulting in overweight in people with diabetes. Up to now, several international investigators have tried to define the best algorithm in order to cover carb- and fat- or protein-rich meals in insulin treatment. In pump treatment, the use of different boluses can help to apply optimal insulin dose for fat- and protein-rich meals, while no standardized ways of insulin management are existing in multiple injection treatment. New hybrid closed-loop systems offer a new possibility for an optimal post-prandial glucose management, particularly for meals containing protein and fat. Finally, current and growing experience from continuous glucose monitoring data underline the necessity to provide a whole food education in young people with T1D and their families from the very beginning.

Implementing Remote Care Visits: Supporting Transition

Speaker: Jennifer Raymond (United States)

In the United States, only 14% of young adults (YA) with type 1 diabetes (T1D) meet the recommended hemoglobin A1c (HbA1c) target of < 7.0% (53mmol/mol) set forth by the International Society for Pediatric and Adolescent Diabetes (ISPAD) and American Diabetes Association (ADA). Furthermore, recent data has shown worsening diabetes control in YA with T1D between 2016-2018, as compared to 2010-2012. The transition from adolescence to young adulthood, which involves multiple changes (e.g. education, occupation, independence), portends greater risk and worse outcomes for T1D patients, including higher rates of complications. Currently, few interventions have proven effective for this YA cohort.

This presentation will review the design, outcomes, and lessons learned from a patient-centered, virtual clinical care model for YA with T1D implemented in two YA populations. The model has resulted in increased engagement in diabetes care and improved psychosocial outcomes while providing cost effective care to YA with T1D.

Following the presentation, attendees will be able to:
- Identify a model for remote care visits in YA with T1D
- Utilize patient-centered, shared decision-making tools in YA with T1D
- Describe challenges to implementation of remote care visits in YA with T1D
- Review potential solutions to challenges of remote care visits in YA with T1D

Opportunities using Apps, Virtual Visits & More

Speaker: Kelly Close
Scientific Programme

Oral Session
15:45 - 17:15
Republic Ballroom

Oral Session II, Acute and Chronic Complications and Associated Diseases

Chairs:
Chair: Asma Deeb (United Arab Emirates)
Chair: Thomas Kapellen (Germany)

Hypoglycemia leaves a persistent metabolomic fingerprint in children with type 1 diabetes
Abstract Presenter: Beata Malachowska (Poland)
15:45 - 15:56

Nasal versus injected glucagon: User experience results of a simulated severe hypoglycemia study
Abstract Presenter: Gregg Gerety (United States)
15:56 - 16:07

Longitudinal determinants of cardiovascular risk in Australian and New Zealand youth with type 1 diabetes: the ADDN study
Abstract Presenter: Jenny Couper (Australia)
16:07 - 16:18

Angiotensin converting enzyme inhibitor (ACEi) and statin combination therapy reduces risk of 3-step retinopathy progression in youth with type 1 diabetes (T1D) in the adolescent cardio-renal protection intervention trial (AdDIT) - a post-hoc analysis based on diabetes duration
Abstract Presenter: Paul Z Benitez-Aguirre (Australia)
16:18 - 16:29

A comprehensive diabetes complications screening (DCAS) program: outcomes in a 20 year incident cohort
Abstract Presenter: Janine Cusumano (Australia)
16:29 - 16:40

Subclinical diabetic neuropathy and early endothelial dysfunction in youth with type 1 diabetes
Abstract Presenter: Elisa Giani (Italy)
16:40 - 16:51

Narrow extended zone retinal calibre is associated with peripheral neuropathy in adolescents with type 1 diabetes
Abstract Presenter: Vallimayil Velayutham (Australia)
16:51 - 17:02

Association between childhood type 1 diabetes and bone mass and structure
Abstract Presenter: Komal Ashokbhai Vora (Australia)
17:02 - 17:13

Evening Event
17:30 - 18:30
Grand Ballroom

Opening Ceremony

Evening Event
18:30 - 19:30
Back Bay

Welcome Reception
Thursday, 31 October 2019

Meetings
07:00 - 09:00 Fairfax

Breakfast Children with Diabetes (UPON INVITATION ONLY!)

Plenary Session
09:00 - 10:30 Grand Ballroom

Plenary Session II, It’s Not just About A1c

Chairs:
Chair: Carine de Beaufort (Luxembourg)
Chair: Alan Delamater (United States)

Glycemic Outcomes Beyond A1c
Speaker: Roy Beck (United States)
HbA1c has been the gold standard for assessing glycemic control and has been demonstrated to be strongly associated with the development of diabetic vascular complications. It is a particularly valuable metric for comparing treatment groups in a randomized trial, for assessing glycemic trends in a population over time, and for cross-sectional comparisons of glycemic control in different populations. However, HbA1c is not always a good indicator of an individual patient’s glycemic control and as such can be misleading due to the wide range of mean glucose concentrations and glucose profiles that can be associated with a given HbA1c level. Additionally, HbA1c is an indicator only of hyperglycemia and provides no information about hypoglycemia, glycemic variability, or daily patterns of glucose concentrations, all of which are important for optimizing diabetes management and can be assessed with continuous glucose monitoring (CGM). Reports such as the Ambulatory Glucose Profile indicate the core CGM metrics during a specified time period (mean glucose, coefficient of variation, and time in the following ranges: 70-180, >180, >250, <70, <54 mg/dL (3.9-10.0, >10.0, >13.9, <3.9, <3.0 mmol/L) as well as providing a visual display of the distribution of values according to time of day. Ten-14 days of CGM data generally provide a good approximation of 3 months of glucose data and for calculating the Glucose Management Indicator (GMI), which is an estimate of an average HbA1c for a given mean glucose concentration. Looking beyond A1C to CGM provides the opportunity for a far more personalized, precision medicine approach to diabetes management.

Outcomes Beyond Glycemic Control
Speaker: Barbara J. Anderson (United States)

Industry Exhibition
10:15 - 16:15 Back Bay
Exercise Symposium: How & Why Exercise Matters

Chairs:
Chair: Peter Adolfsson (Sweden)
Chair: Timothy Jones (Australia)

The Science of Exercise: From Cells to Humans
Speaker: Laurie Goodyear (United States)
It is now well-established that poor maternal diet and obesity can lead to deleterious health outcomes in offspring, especially in adulthood. On the other hand, exercise during pregnancy not only protects against the development of hypertension and excessive weight gain in the mother but also lowers the risk of both macrosomia and low birth weight in offspring. Studies in humans also suggest that physical exercise during pregnancy can improve the health of offspring in infancy and childhood. While these important studies strongly suggest that exercise during pregnancy is important for the health of adolescent offspring, it has not been determined if maternal exercise can reduce rates of diabetes or obesity in adulthood or middle-age, stages of life marked by a high risk for the development of metabolic disease. Studies using rodent models have been important in delineating the effects of parental exercise on the metabolic health of adult offspring. In our studies of mice, we have observed that maternal exercise can abolish the development of glucose intolerance and reduce both insulin concentrations and body fat in male and female offspring as they age, even if the offspring’s mother had consumed a high-fat diet during pregnancy. In this presentation, the underlying mechanisms for the effects of maternal exercise will be discussed, as well exciting new data revealing a role for the liver in this process. Furthermore, data will be presented on the discovery of a novel placental-derived protein that confers beneficial effects on offspring liver function. The long-term goal of this work is to translate these findings to humans, which could have significant clinical implications on offspring health.

Exercise Physiology in Trained and Untrained Athletes
Speaker: Michael Riddell (Canada)

Clinical Applications of Exercise in Pediatric Type 1 Diabetes
Speaker: Elizabeth Davis (Australia)
Exercise brings many benefits to the management of Type 1 diabetes, but also a number of challenges. This presentation will cover some of the challenges of exercise and blood glucose management for young people living with diabetes. However, the main focus will be on the application or use of exercise in diabetes. In particular, knowledge about the use of the 10 sec sprint, its impact on blood glucose levels and how it can be incorporated into management will be discussed. Less evidence based, but equally important the application of exercise for mental health in young people will also be addressed.
Clinical Science Symposium: CVD Risk - An Often Overlooked Pediatric Concern - ESPE Symposium

Chairs:
Chair: Ingrid Libman (United States)
Chair: Hanna Dis Margeirsdottir (Norway)

**Insulin Resistance in Type 1 Diabetes**
Speaker: Kristen Nadeau (United States)

Evidence will be presented supporting the fact that lean and obese T1D adolescents and adults have marked insulin resistance (IR). Cardiovascular disease (CVD) is the leading cause of mortality in type 1 diabetes (T1D) and therefore evidence regarding the role of IR in CVD, diabetic kidney disease (DKD) and other diabetes complications will be assessed. Rising rates of obesity complications is a pressing concern in the general pediatric population, thus the prevalence of obesity in pediatric T1D will be discussed, as well as the unique features of the insulin resistant phenotype in T1D, and how obesity impacts that phenotype. We will also discuss the impact of BMI on IR, CVD and DKD risk in T1D youth. Finally, we will assess the impacts of interventions to-date on insulin sensitivity and cardiovascular and renal health in T1D, and the importance of managing weight in T1D to prevent worsening IR and diabetes complications.

**Updates from AdDIT**
Speaker: Loredana Marcovecchio (United Kingdom)

The Adolescent Type 1 Diabetes cardio-renal Intervention Trial (AdDIT) recruited a cohort of 850 adolescents with type 1 diabetes (T1D) across three countries, Australia, Canada and UK. Study participants were stratified in two groups: high-risk or Trial cohort (n=450) and low-risk or Observational cohort (n=400), based on their urinary albumin-creatinine ratio (ACR) being in the upper or lower/middle tertiles, respectively. All study participants were followed for 2-4 years with centralized assessments of renal, retinal and cardiovascular (CVD) complications.

The high-risk group was recruited into the AdDIT trial with the aim of assessing the effects of early cardio-renal interventions with ACE inhibitors and statins in preventing complications. The principle findings of the AdDIT trial were that although neither drug reduced the overall mean ACR, the ACE inhibitor reduced progression to microalbuminuria by 43% and statins reduced exposure to lipids and inflammatory markers. Adherence to both medications was around 80% and both were well tolerated.

Data collected from the AdDIT cohort have also confirmed the value of ACR as an early renal, retinal and CVD marker in young people with T1D. At baseline, AdDIT participants, aged 10-16 years, with increased urinary ACR levels showed higher glomerular filtration rate and increased CVD risk, as indicated by higher lipid levels, arterial stiffness and increased aortic intima media thickness, signs of impaired cardiac autonomic function as well signs of early alterations in the retinal microvasculature, when compared to T1D adolescents with lower ACR. During follow up, those with high ACR at baseline had a higher risk of developing microalbuminuria, retinopathy progression and a worse cardiovascular profile.

Follow up of both the Trial and Observational cohorts is undergoing with the plan of re-assessing study participants 5 years from the end of the trial, when the cohort will be in the second/third decade of diabetes, and the first direct manifestations of complications can appear. Follow up of the AdDIT cohort will provide invaluable information on rates of long-term complications and further support for the utility of ACR, in adjunct to HbA1c and other risk factors, to predict vascular risk in young people with T1D.
Pediatric CVD Risk: Missed Opportunities and Clinical Inertia  
Speaker: Michelle Katz (United States)  
Cardiovascular disease (CVD) continues to be the major cause of premature mortality in adults with youth-onset type 1 diabetes. The relative risk of premature cardiovascular disease is greatest for those persons with the earliest onset of diabetes. Multiple risk factors interact to increase the risk of future cardiovascular disease in persons with type 1 and type 2 diabetes including hyperglycemia, diabetic kidney disease, hypertension and dyslipidemia among multiple other risk factors.

Clinical guidelines uniformly recommend more aggressive management of hypertension and dyslipidemia in youth with diabetes than in youth without diabetes. Some CVD risk factors are inadequately managed in clinical practice when compared with clinical guidelines. Providers report focusing on counseling on lifestyle management (e.g. healthy eating or exercise) for CVD risk and may delay medication initiation as compared to clinical guidelines. Providers most commonly report patient-centered barriers to optimal CVD risk factor management such as patients having insufficient support, motivation, or confidence to be successful rather than medical system related barriers such as short visits, difficulty recognizing when intervention is needed, or provider training. Teens and parents report pervasive unhealthy food options, the negative influence of peers and/or family, parental dislike of medications, limited teen knowledge, and teen focus on the present as barriers to CVD risk factor management. Recommended strategies for counseling teens on CVD risk factors include assessing teen’s knowledge and adjusting counseling accordingly, providing specific and realistic guidance, focusing on present day advantages of heart healthy behaviors in addition to future benefits, acknowledging the impact of concurrent diabetes on recommendations, and avoiding framing medication initiation as a failure of lifestyle change.

Abstract is not shown completely because the length is exceeded

Oral Session III, Pumps, CGM and Automated insulin delivery

Chairs:
Chair: Eda Cengiz (United States)
Chair: Andrea Scaramuzza (Italy)

Acceptability and effectiveness of a predictive hypoglycemia alert in children and adolescents  
Abstract Presenter: Andrew Scott Parker (United States)  
Continuous glucose monitoring alerts for existing or impending hypoglycemia among children and adolescents  
Abstract Presenter: Andrew Scott Parker (United States)  
Successful CGM initiation early in the course of T1D results in persistence of use  
Abstract Presenter: Priya Prahalad (United States)  
Effect of fat on post prandial glucose excursions in young children while using a hybrid closed-loop system  
Abstract Presenter: Laya Ekhaspour (United States)
**Scientific Programme**

**Closed-loop insulin therapy in free-life shows better glucose control when used 24/7 versus overnight only in pre-pubertal children with type 1 diabetes: interim analysis of the Free-life Kid AP Study**
Abstract Presenter: Elise Bismuth (France)

**Safety and performance of the omnipod hybrid closed-loop system in young children aged 2-6 years with Type 1 diabetes**
Abstract Presenter: Bruce Buckingham (United States)

**Pediatric real-world and pivotal trial glycemic outcomes during MiniMed™ 670G system use**
Abstract Presenter: Robert Vigersky (United States)

**Technology is more than the device: sustainable improvement of glycaemic control in type 1 diabetes through data-driven eHealth including patient-HCP contacts**
Abstract Presenter: Dick Mul (Netherlands)

**Meetings**
12:30 - 14:00
Room Hampton

**Volunteering Opportunities in Africa**

**Industry Satellite Symposium / Workshop**
12:45 - 14:15
Republic Ballroom

**Satellite Symposium**

**Industry Satellite Symposium / Workshop**
12:45 - 14:15
Fairfax

**Industry Workshop**

**Industry Workshop**

**Meetings**
13:15 - 14:15
Room Beacon B

**Psychologists Special Interest Group Meeting**

**Poster Tour**
14:30 - 15:30
Posters

**PT10, Poster Tour 10 - Psychosocial Issues, Education, Nutrition, and Exercise**

**Chairs:**
Chair: Elisa Giani (Italy)
Scientific Programme

The degree of fathers’ involvement in taking care of their children with diabetes and its implications in family functioning in the assessment of diabetic’s mothers
Abstract Presenter: Monika Zamarlik (Poland)

Longitudinal associations between medical provider autonomy support and regimen adherence in adolescents with type 1 diabetes
Abstract Presenter: Alan Delamater (United States)

Innovative strategies in adolescent research: using a clinic-based research registry and internet platform to assess risky behavior in a national sample of older adolescents with type 1 diabetes.
Abstract Presenter: Rachel Wasserman (United States)

Long-term associations between parental depression and diabetes distress in the two years following child-onset of type 1 diabetes (T1D)
Abstract Presenter: Shideh Majidi (United States)

Regional differences in glycemic control and psychosocial/patient-reported outcomes (PROs) in adults (26-44 years) with type 1 diabetes (T1DM): the SAGE study
Abstract Presenter: Felipe Lauand (France)

Fear of hypoglycemia impacts quality of life in adolescents with type 1 diabetes
Abstract Presenter: Talia Hitt (United States)

Disturbed eating behaviors in youth with type 1 diabetes during the transition to adulthood: A one-year prospective study
Abstract Presenter: Eveline Goethals (United States)

Resilience reinforces the protective impact of family functioning on diabetes distress in youth with type 1 diabetes
Abstract Presenter: Dan Luo (China)

Mindfulness meditation as a modality to improve the glycemic care and quality of life in patients with type 1 diabetes (T1DM)
Abstract Presenter: Rishi Shukla (India)

Executive dysfunction in teens with type 1 diabetes (T1D) negatively impacts quality of life
Abstract Presenter: Eveline Goethals (United States)

Poster Tour
14:30 - 15:30

PT11, Poster Tour 11 - Psychosocial Issues, Education, Nutrition, and Exercise

Chairs:
Chair: Anastasia Albanese-O’Neil (United States)

DEAPP (diabetes education application) a structured education program for newly diagnosed children type 1 diabetes
Abstract Presenter: Sarah Lockwood-Lee (United Kingdom)

Interventions delivered by Certified Child Life Specialists (CCLS) to provide education and support for youth with type 1 diabetes (T1D) in an ambulatory setting
Abstract Presenter: Rebecca Ortiz La Banca (United States)
Experiential learning in T1D technology education: knowledge of parents and providers
Abstract Presenter: Brynn E Marks (United States)

Personalized training for the school personnel of each child is more effective than general information conference for the management of children with T1D in the school
Abstract Presenter: Monica Marino (Italy)

Social deprivation is an important determinant towards the practice of routinely downloading blood glucose data at home for families and children with Type 1 Diabetes
Abstract Presenter: Sze May Ng (United Kingdom)

Parent perceptions of the content and timing of education and resources during the recent-onset period of type 1 diabetes
Abstract Presenter: Susana Patton (United States)

A Shared Decision Making (SDM) approach to engage youth with type 1 diabetes (T1D) in Cardiovascular Disease (CVD) prevention
Abstract Presenter: Jodi Krall (United States)

A qualitative analysis of providers’ experiences wearing CGM
Abstract Presenter: Brynn E Marks (United States)

Challenges in the inpatient education of new onset type 1 DM patients: Can tablet technology be the answer?
Abstract Presenter: Steven Ghanny (United States)

Practical approach to using trend arrows on rt-CGM system in a camp setting of adolescents living with type 1 diabetes on either MDI or CSII insulin therapy
Abstract Presenter: Marta Bassi (Italy)

Poster Tour
14:30 - 15:30

PT15, Poster Tour 15 - Diabetes Epidemiology, Genetics, Immunology, and the Environment

Chairs:
Chair: Sarah Ehtisham (United Arab Emirates)

A multi-disciplinary quality improvement (QI) innovation: improving early diagnosis of type 1 diabetes in children and young people (CYP) in the primary care setting in Cardiff & Vale University Health Board
Abstract Presenter: Ambika Shetty (United Kingdom)

In a large unscreened cohort of children with type 1 diabetes, β-cell autoantibody positivity is a weak predictor of 5 year metabolic outcome: a report from the DPV Registry
Abstract Presenter: Daniele Pacaud (Canada)

Age-, period- and cohort modelling of type 1 diabetes incidence in Europe among children age 0-15 years
Abstract Presenter: Jannet Svensson (Denmark)

Distribution and frequency of HLA Class II alleles and haplotypes in Libyan children with type 1 diabetes mellitus
Abstract Presenter: Millad Ghawil (Libyan Arab Jamahiriya)
Scientific Programme

**Review of autoantibody status and titre as predictors of disease progression in type 1 diabetes mellitus (T1DM) in the first 12 months after diagnosis**  
Abstract Presenter: Mark Deakin (United Kingdom)

**The frequency of celiac associated haplotypes in Polish patients with type 1 diabetes**  
Abstract Presenter: Artur Groszek (Poland)

**Serum trypsinogen and lipase as biomarkers of exocrine pancreatic function in newly diagnosed type 1 diabetic children and adolescents**  
Abstract Presenter: Doaa Elzoghby (Egypt)

**The contribution of natural killer cells in children with type 1 diabetes mellitus**  
Abstract Presenter: Iwona Ben-Skowronek (Poland)

**A study of serum betatrophin levels in children with type 1 diabetes mellitus**  
Abstract Presenter: Basma Ali (Egypt)

**The prevalence of type 1 diabetes autoantibodies among patients with 18q del syndrome**  
Abstract Presenter: Anna Hogendorf (Poland)

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**PT09, Poster Tour 9 - Diabetes Acute and Chronic Complications**

**Chairs:**  
Chair: Juliana Chizo Agwu (United Kingdom)

**The homozygous status of polymorphism Z-2/Z-2 of aldose reductase gene(AKR1B1) in the polyol pathway increases the prevalence of autonomic and peripheral neuropathy in children and adolescents with type 1 diabetes mellitus(T1D)**  
Abstract Presenter: Kyriaki Karavanaki (Greece)

**The relationship of sclerostin levels with diabetes duration and bone mineral density in adolescents with type 1 diabetes**  
Abstract Presenter: Betul Ersoy (Turkey)

**The obesity paradox: retinopathy in youth with T2D in the TODAY study**  
Abstract Presenter: Lynne L. Levitsky (United States)

**Do the years with type 1 diabetes before puberty matter for development of microvascular complications?**  
Abstract Presenter: Anandakumar Amutha (India)

**The value of serum cystatin C versus creatinine as a biomarker for diabetic nephropathy in young type 1 diabetes patients**  
Abstract Presenter: Ingrida Stankute (Lithuania)

**P100 latency of visual evoked potentials in children with type 1 diabetes mellitus**  
Abstract Presenter: Nur Rochmah (Indonesia)

**Changed body composition and affected bone parameters in young women with Type 1 Diabetes**  
Abstract Presenter: Gun Forsander (Sweden)
Scientific Programme

**CHiC- D** - Cardiovascular Health in Children with type 1 Diabetes - early detection, cardiovascular prevention and treatment monitoring  
Abstract Presenter: Ebba Bergdahl (Sweden)

**Impact of obesity on markers of cardiovascular function in youth with type 1 diabetes as compared to youth with type 2 diabetes**  
Abstract Presenter: Kalie L. Tommerdahl (United States)

**Assessment of platelet morphology in children with type 1 diabetes mellitus (T1D)**  
Abstract Presenter: Basma Ali (Egypt)

**Poster Tour**  
14:30 - 15:30

**PT12, Poster Tour 12 - Diabetes Care and New Therapeutics**

**Chairs:**
Chair: Przemyslawa Jarosz-Chobot (Poland)

- **Estimating HbA1c from average blood glucose - accuracy of estimates based on paediatric clinic data**  
  Abstract Presenter: Vicky Alexander (United Kingdom)

- **Optical coherence tomography and C-peptide short-term follow-up in a child with Wolfram’s syndrome treated with Liraglutide**  
  Abstract Presenter: Giulio Frontino (Italy)

- **Driving improvements in diabetes care delivery through the national paediatric diabetes audit - experience from a UK children's hospital**  
  Abstract Presenter: Mark Deakin (United Kingdom)

- **Differences in glycemic control and disease management by age and region in adults with type 1 diabetes (T1DM): the SAGE study**  
  Abstract Presenter: Felipe Lauand (France)

- **Improved average HbA1c and increased proportion of patients with HbA1c < 58 mmol/mol after 18 months of structured and focused work with simple and affordable tools in a multidisciplinary diabetes team in Oslo, Norway. Experiences from a quality improvement project**  
  Abstract Presenter: Anne Karin Måløy (Norway)

- **Three-variate trajectories of metabolic control, body mass index, and insulin dose: heterogeneous response to initiation of pump therapy in type 1 diabetes youth**  
  Abstract Presenter: Anke Schwandt (Germany)

- **The use of alternative and complementary medicine in children with type 1 diabetes mellitus**  
  Abstract Presenter: Nevena Krnic (Croatia)

- **Quality or quantity? Findings from the national paediatric diabetes audit (NPDA) workforce survey show increased staff numbers are not associated with unit level improvements in glycaemic outcomes in England and Wales**  
  Abstract Presenter: Francesca Annan (United Kingdom)
Scientific Programme

Associations between goal setting behavior and changes in HbA1c among youth with type 1 diabetes in the flexible lifestyle empowering change (FLEX) Intervention
Abstract Presenter: Angelica Cristello (United States)

The PolPedDiab HbA1c study: the results of the first national survey among children with type 1 diabetes in Poland
Abstract Presenter: Agnieszka Szadkowska (Poland)

PT13, Poster Tour 13 - Diabetes Care and New Therapeutics

Chairs:
Chair: Hans-Jacob Bangstad (Norway)

Different alterations in glomerular filtration rate detected by cystatin C in children and adolescents with type 1 diabetes or obesity
Abstract Presenter: María Pía Santucci (Argentina)

Use of metformin as adjunct therapy in children and adolescents with poorly controlled type 1 diabetes and high insulin requirements. A 52-week randomized placebo-controlled clinical trial
Abstract Presenter: Roque Cardona-Hernandez (Spain)

Sotagliflozin (SOTA) reduces glucose variability and risk for hyperglycemia in adults with type 1 diabetes
Abstract Presenter: Mike Davies

Sotagliflozin (SOTA) reduces markers of arterial stiffness in type 1 diabetes (T1D): pooled analysis from inTandem1 and inTandem2 clinical trials
Abstract Presenter: Helena W Rodbard (United States)

Sotagliflozin (SOTA), a dual sodium glucose cotransporter (SGLT)1 and SGLT2 inhibitor, in overweight/obese patients with type 1 diabetes (T1D): addressing unmet needs as adjunct therapy to insulin
Abstract Presenter: Thomas Danne (Germany)

Lower risk for severe hypoglycemia with Gla-300 vs. Gla-100 in patients with type 1 diabetes: a meta-analysis of 6-month phase 3 clinical trials
Abstract Presenter: Christian Sussebach (Germany)

Quality assurance of insulin vials using NMR (Nuclear Magnetic Resonance) spectroscopy
Abstract Presenter: B. Göran Karlsson (Sweden)

The diabetes drug metformin reverses cognitive impairment and attenuates insulin receptor in diabetic aging female rat brain: a link with diabetes and Alzheimer's disease
Abstract Presenter: Pardeep Kumar (India)

Sotagliflozin (SOTA) leads to lower rates of clinically relevant hypoglycemic events at any HbA1c level at week 52 in adults with type 1 diabetes (T1D)
Abstract Presenter: Thomas Danne (Germany)

Insulin Glargine 300 U/mL (Gla-300) provides effective glycemic control in youths with type 1 diabetes (T1D): the EDITION JUNIOR study
Abstract Presenter: Elisabeth Niemoeller (Germany)
Scientific Programme

Poster Tour
14:30 - 15:30

PT14, Poster Tour 14 - Telemedicine & Digital Support, Pumps & CGM, and Automated Insulin Delivery

Chairs:
Chair: Klemen Dovc (Slovenia)

- Bacterial strains colonizing the sensor electrodes of continuous glucose monitoring system in children with diabetes
  Abstract Presenter: Przemyslawa Jarosz-Chobot (Poland)

- Using trend arrow-protocol in adolescents with type 1 diabetes in continuous glucose monitoring minimizes the risk of hypoglycemia during a sport-school camp
  Abstract Presenter: Davide Tinti (Italy)

- Glycemic variability assessment with continuous glucose monitoring systems demonstrates seasonal patterns in pediatric patients with type 1 diabetes mellitus
  Abstract Presenter: Jedrzej Chrzanowski (Poland)

- Continuous subcutaneous insulin infusion (CSII) versus multiple-daily injections (MDI) in youths with type 1 diabetes mellitus: a systematic review and meta-analysis of the literature with an equity lens
  Abstract Presenter: Tiago Jeronimo Dos Santos (Spain)

- Continuous glucose monitoring in teens and young adults (CITY) improves glycemic control: primary results from a multi-center randomized clinical trial (RCT)
  Abstract Presenter: Kellee Miller (United States)

- Impact on glycaemic outcomes of funding continuous glucose monitoring for youth in Australia
  Abstract Presenter: T W Jones (Australia)

- Lipoatrophy in children, adolescents and adults with insulin pump (CSII) treatment: is there a beneficial effect of insulin glulisine?
  Abstract Presenter: Olga Kordonouri (Germany)

- Disparities in diabetes technology use and HbA1c in pediatric type 1 diabetes: a trans-atlantic comparison
  Abstract Presenter: Ananta Addala* (United States)

- Accuracy of glucose sensor estimate of HbA1c in children with type 1 diabetes
  Abstract Presenter: Sarah Ehtisham (United Arab Emirates)

- Real world use of CGM among adolescents and young adults with type 1 diabetes (T1D): reduced burden, but little interest in data-analyses
  Abstract Presenter: Karin Lange (Germany)

Poster Tour
14:30 - 15:30

PT16, Poster Tour 16 - Childhood Obesity & Type 2 Diabetes, Associated Diseases, and Other Forms of Diabetes

Chairs:
Chair: Siri Greeley (United States)

Page 31 / 69
Scientific Programme

Genetic determinants of intellectual disability in KATP channel neonatal diabetes
Abstract Presenter: Pernille Svalastoga (Norway)

Genetic etiology and estimated prevalence of neonatal diabetes mellitus in the Czech Republic
Abstract Presenter: Klára Roženková (Czech Republic)

A mathematical model to determine optimal oral glucose tolerance test timepoints for identifying prediabetes in individuals with cystic fibrosis
Abstract Presenter: Kalie L. Tommerdahl (United States)

Clinical characteristics of patients referred for HNF1B testing - Polish population study
Abstract Presenter: Arkadiusz Michalak (Poland)

Clinical and laboratory features of patients with heterozygous CEL mutation (p.I488T)
Abstract Presenter: Aysehan Akinci (Turkey)

Permanent neonatal diabetes - characteristics, clinical and genetic diagnosis in Kosovo
Abstract Presenter: Vjosa Kotori (Albania)

Case study of monogenic diabetes mellitus caused by RFX6 mutation in a 14-year-old female patient
Abstract Presenter: Jeesuk Yu (Korea, Republic of)

The clinical and genetic characteristics of permanent neonatal diabetes mellitus (PNDM) in the State of Qatar
Abstract Presenter: Khalid Hussain (Qatar)

Searching for monogenic forms of diabetes among consanguineous families using whole exome sequencing (WES): lessons learned from an Iraqi Kurdish cohort
Abstract Presenter: Jan Lebl (Czech Republic)

Posters on Display
14:30 - 15:30

Late Breaking Posters on Display only

Telemedicine as a supplement to regular visits - evaluation via a multicenter randomized controlled study
Abstract Presenter: Peter Adolfsson (Sweden)

Predictors of fear of hypoglycemia in a nationwide population-based pediatric type 1 diabetes population - the Norwegian Childhood Diabetes Registry (NCDR)
Abstract Presenter: Håvard Hatle (Norway)

Noonan Syndrome mutation related metabolic profile, lean phenotype, unfavorable lipid and insulin profile
Abstract Presenter: Renata Maria Noronha (Brazil)

Cystatin C in children and adolescents with type 1 diabetes: a new early marker of cardiovascular disease and heart failure
Abstract Presenter: Barbara Predieri (Italy)

Teaching patients with diabetes and their family to manage emergencies: integrating simulation session into insulin pump curriculum
Abstract Presenter: Maria Buithieu (Canada)
Scientific Programme

MyDiaText™: texting the way to better diabetes care
Abstract Presenter: Tara Kaushal (United States)

Acquired lipodystrophy among children and adolescents attending a diabetes camp
Abstract Presenter: Tiago Jeronimo Dos Santos (Spain)

Overview of research and recruitment methods of young adults with T1D
Abstract Presenter: Christina Roth (United States)

Prevalence of coeliac disease in children and adolescents with type 1 diabetes mellitus in a tertiary hospital in South Africa
Abstract Presenter: Jacobus Cornelius van Dyk (South Africa)

Screening of cardiac autonomic neuropathy in children and adolescents with diabetes mellitus
Abstract Presenter: Aram Yang (Korea, Republic of)

Development of a guideline for education and use of CGM and FGS in primary schools
Abstract Presenter: Jane Haest (United Kingdom)

The relation among serum insulin-like growth factor-1 (IGF-I)/IGF binding protein-3 (IGFBP-3) axis, glycemic control and lipid metabolism in adolescents with naive type 2 diabetes
Abstract Presenter: Dae Gyu Lee (Korea, Republic of)

Monogenic VS idiopathic type 1 DM
Abstract Presenter: Shimaa Abdalla (Saudi Arabia)

Posters on Display
14:30 - 15:30

Prevalence of somatic symptom disorder requiring hospitalization in children and adolescents with type 1 diabetes mellitus
Abstract Presenter: Gianluca Tornese (Italy)

“VIG-Diabetes”: assessing the effect on glycaemic control of a video based intervention to improve communication skills in young people with type 1 diabetes
Abstract Presenter: Clare Webster (United Kingdom)

Silent heroes: parent and carer needs and perspectives about supporting their children living with type 1 diabetes
Abstract Presenter: Kim Henshaw (Australia)

Evaluating the requirement of both verbal and written information at diagnosis
Abstract Presenter: Kath Millar (United Kingdom)

The escalating trend of using weight loss supplements with a view to safety concerns among overweight patients with diabetes mellitus type 2. The situation in Albanian community pharmacies
Abstract Presenter: Edmond Pistja (Albania)

Comparing knowledge and concerns for complications of reproductive health (RH) between female adolescents and young adults (AYA) with T1D in Chile and United States (U.S.)
Abstract Presenter: Hiba Abujaradeh (United States)
Scientific Programme

Costa Rica youth diabetes camp: impact on the nutritional knowledge, attitudes towards nutritional care plan and living with the condition of young people with diabetes
Abstract Presenter: Paula Chinchilla (Costa Rica)

Targeting post breakfast hyperglycemia with protein based foods may reduce macrovascular disease risk?
Abstract Presenter: Smita Shah (India)

Carbohydrate counting and its impact on glycemic control & insulin dose titration in children and adolescents with type1 diabetes mellitus in India
Abstract Presenter: Salis Sheryl (India)

To find prevalence of type 1 with autoimmune thyroid disorders, age, duration, thyroid antibodies, growth and glycemic variability in Indian scenario
Abstract Presenter: Viralsinh Raj (India)

Current state of insulin therapy for Japanese pediatric and adolescent type 1 diabetes: the 2018 cohorts of the childhood-onset type 1 diabetic patients in Japanese Study Group of Insulin Therapy for Childhood and Adolescent Diabetes (JSGIT)
Abstract Presenter: Toru Kikuchi (Japan)

Better glycaemic control first years after type 1 diabetes diagnosis increases the likelihood of residual C-peptide 10 years later
Abstract Presenter: Annika Grönberg (Sweden)

Detection of the diagnostic significance of autoantibodies in carbohydrate metabolism disorders in children and adolescents
Abstract Presenter: Tatiana Filippova (Russian Federation)

Review of high dose insulin injection treatments for diabetic ketoacidosis occurred to type 1 diabetes patients in our hospital
Abstract Presenter: Yoshihiko Yuyama (Japan)

A case of diabetic ketoacidosis associated with severe hyperosmolar hypernatremic state and thrombosis in type 2 diabetes mellitus
Abstract Presenter: Yong Hyuk Kim (Korea, Republic of)

The Management of Diabetic Ketoacidosis (DKA) in a district general hospital in the UK
Abstract Presenter: Vidya Viswanath (United Kingdom)

Type 1 diabetes mellitus: a missed diagnosis
Abstract Presenter: Pavithra Kadli (India)

Necrobiosis Lipoidica - a rare complication in a young diabetic
Abstract Presenter: Rabin Mohanty (United Kingdom)

Lipid profile, glycemic control and nutrition status in children with type 1 diabetes
Abstract Presenter: Vera Zdravkovic (Serbia)

Individualized patient centered multidisciplinary care approach for adolescents with diabetes in reducing readmission
Abstract Presenter: Aravind Venkatesh Sreedharan (Singapore)

Clinical profile and outcome of type 1 diabetes mellitus in a tertiary care centre of Nepal
Abstract Presenter: Jyoti Agrawal (Nepal)
Scientific Programme

A trend of a higher percentage of total basal insulin dose to total daily insulin dose and worse glycemic control in younger-onset patients with type 1 diabetes
Abstract Presenter: Katsuyuki Matsui (Japan)

A National Children and Young People’s Diabetes Quality Programme - The quality assurance picture so far
Abstract Presenter: Megan Peng (United Kingdom)

Usage and usefulness of insulin pumps for pediatric patients with type 1 diabetes in the real world
Abstract Presenter: Hiroki Sobajima (Japan)

Evaluating a multidisciplinary Chronic Illness Management Program for children and adolescents with type 1 diabetes
Abstract Presenter: Claire Marchetta (United States)

Family involvement in the care of preteens with type 1 diabetes
Abstract Presenter: Louise Norman Jespersen (Denmark)

Parent-child dyads in diabetes: Does it affect control and outcomes for both or either?
Abstract Presenter: Conor Cronin (Ireland)

Getting kids and families “Back on Track”: a retrospective chart review of patients in McMaster’s Back on Track program for children living with type 1 diabetes
Abstract Presenter: Kristen Salena (Canada)

InRange: a randomized controlled trial comparing Gla-300 vs IDeg-100 in people with type 1 diabetes (T1D) using continuous glucose monitoring (CGM)
Abstract Presenter: Tadej Battelino (Slovenia)

The impact of sotagliflozin (SOTA), a dual sodium-glucose cotransporter (SGLT) 1 and 2 inhibitor, on renal function, albuminuria, systolic blood pressure (SBP) and diastolic blood pressure (DBP) in adults with type 1 diabetes (T1D)
Abstract Presenter: Daniel H van Raalte (Netherlands)

Inherit “B” blood group and get diabetes for free!
Abstract Presenter: Sana Hasan (Pakistan)

Camps Man Mohan (= Mind Endearing) for type 1 diabetes children and youth: challenges, experiences and successes in resource limited settings (1987-2019-Future ????) - (100% free to the beneficiaries)
Abstract Presenter: Namya Gaekwad (India)

Pre type 1 autoimmune diabetes presenting as childhood stress hyperglycaemia
Abstract Presenter: Sathwik Reddy (India)

Psychosocial impact of type 1 youth diabetes camps in India - patient advocacy and going beyond blood glucose testing
Abstract Presenter: Apoorva Gomber (India)

Sarvodaya and Anthyodaya - diabetes and health care for all: 3 decades of Indian challenges, struggles and experience
Abstract Presenter: Keerthana Haridas (India)

Fasting blood glucose and lipids profile among children living with human immunodeficiency virus infection on first line antiretroviral therapy in Abidjan, Cote d’Ivoire
Abstract Presenter: Elizabeth Oyenusi (Nigeria)
Scientific Programme

Childhood onset diabetes mellitus: epidemiological, clinical and follow-up features in Ouagadougou (Burkina Faso)
Abstract Presenter: Yempabou Sagna (Burkina Faso)

Factors affecting insulin adherence in type 1 diabetics presenting in ketoacidosis - an experience from a teaching hospital
Abstract Presenter: Ayesha Ahmad (India)

Advantages and difficulties in using sensor-augmented pump therapy with predictive insulin suspension in pediatric patients with type 1 diabetes
Abstract Presenter: Catherine Ajzenman (France)

Evaluation of the use of freestyle glucose monitoring sensor in children and young people with type 1 diabetes mellitus at diagnosis and established
Abstract Presenter: Sanjana Kattera (United Kingdom)

Comparison of glycaemic variability in adult with Type 1 Diabetes on insulin pump and insulin injection
Abstract Presenter: Feny Patel (India)

Sensor augmented pump therapy effects glycemic variability
Abstract Presenter: Damla Goksen (Turkey)

“Diabetes in your face”. Experiences of people with type 1 diabetes during altitude hike in tropical rainforest using continuous blood glucose monitoring: a qualitative study
Abstract Presenter: Katarzyna Anna Gajewska (Ireland)

Study of subclinical hypothyroidism in children with type 1 diabetes mellitus and its relation to lipid profile
Abstract Presenter: Shaymaa Elsayed (Egypt)

Usefulness of DQ typing for coeliac disease screening in children and adolescents with type 1 diabetes: Blackpool, UK experience
Abstract Presenter: Taher Kagalwala (United Kingdom)

An unusual case of dual metabolic pathology
Abstract Presenter: Shashikala Gowda (United States)

The hyperosmolar state mixed with DKA is underrecognised and more severe in children with limited mobility
Abstract Presenter: Sinny Lau (United Kingdom)

The prevalence of Type 1 Diabetes and Autistic Spectrum Disorder in Highland Region, Scotland, and its impact on glycaemic control and care needs
Abstract Presenter: Louise Ferguson (United Kingdom)

Wolcott-Rallison syndrome in the Gulf & Levant: a case report and review of regional literature
Abstract Presenter: Nandu Thalange (United Arab Emirates)

A prenatal diagnosis in a family with neonatal diabetes
Abstract Presenter: Nancy Elbarbary (Egypt)

Effect of growth hormone treatment in GCK-MODY patient
Abstract Presenter: Alicja Szwilling (Poland)
Successful sulfonylurea treatment of an adolescent with a transient neonatal diabetes due to a 6q24 mutation
Abstract Presenter: Thekla von dem Berge (Germany)

Symposium
15:45 - 17:15
Grand Ballroom

Clinical Science Symposium: Obesity & Type 2 Diabetes

Chairs:
Chair: Lynne L. Levitsky (United States)
Chair: Lynda Fisher (United States)

Curing Type 2 Diabetes: TEENLabs Study
Speaker: Thomas Inge (United States)

An update on RISE and TODAY
Speaker: Silva Arslanian (United States)

With the increasing rates of childhood obesity, the incidence and prevalence of youth type 2 diabetes (T2DM) is on a relentless increase, particularly in racial/ethnic minorities. Worldwide, the highest rate of youth T2DM is reported from the USA, with similar trends in Europe and Asia, but with a lower incidence overall.

To date, the lessons learned about youth-onset T2DM indicate that it is an aggressive disease characterized by the early appearance and rapid progression of complications. Compared to peers with type 1 diabetes, complications and mortality are higher in youth with T2DM despite comparable age and similar duration of diabetes. Moreover, the progressive deterioration in b-cell function is much faster in youth T2DM than that reported in adults (~20-35% decline per year in youth compared with ~7-10% in adults). These youth are also at higher risk for early mortality compared with adults when matched for diabetes duration. Despite these, there is a dearth of therapeutic options for youth with T2DM, limited to only metformin and insulin, and very recently Liraglutide. Lastly, the Treatment Options for Type 2 Diabetes in Adolescents and Youth (TODAY) study demonstrated that initial b-cell reserve is an independent predictor of glycemic durability. Therefore, the Restoring Insulin Secretion (RISE) study was conceived with the aim of preserving or restoring insulin secretion in individuals with prediabetes and early T2DM before significant loss in b-cell function occurs.

Since b-cell dysfunction is central to the pathogenesis of prediabetes and T2DM, the RISE Study evaluated different interventions, metformin alone for 12 months, or glargine for three months followed by metformin for 9 months, to prevent the progressive loss of β-cell function. The RISE Pediatric and Adult Medication Studies were designed in tandem to allow for direct comparison between youth and adults. This lecture will present the most recent and novel findings from the RISE study.
### Practical Management of Childhood Obesity & Type 2 Diabetes

**Speaker:** Jill Hamilton (Canada)

Meta-analyses of randomized trials in pediatric obesity demonstrate very modest reductions in BMI z-score, and sustained weight loss is very challenging due to strong biologic mechanisms that protect against this. Type 2 diabetes generally appears in adolescence, is highly linked to obesity and insulin resistance, affects certain populations disproportionately, and in parts of the world, often occurs in the most vulnerable of families who experience inequities in the social determinants of health. Few studies are available at this time to guide best practice in pediatric T2D. Treatment goals are multiple and challenging including self-management of diabetes, treatment of comorbidities, weight loss through changes in eating behaviours and regular physical activity. Combining this altogether, it is not surprising that children and youth with T2D, their families AND their health care teams may feel overwhelmed, helpless, frustrated that goals are not being met, and concerned about health risks now, and in the future. This objective of this session is to focus on an approach to working toward treatment goals incrementally, set realistic expectations, engage the patient and family, and re-frame what successful outcomes might look like.

### The Brain and Diabetes

**Chairs:**
- Chair: Fergus Cameron (Australia)
- Chair: Neil White (United States)

#### Implications of Neuroimaging Findings in Youth with Type 1 Diabetes

**Speaker:** Tamara Hershey (United States)

The impact of type 1 diabetes on the brain has been a long-standing area of inquiry and concern. Early work focused on the relationship between the most extreme glycemic states (e.g. severe hypoglycemia) and brain function or structure, using mostly small samples and non-specific outcome measures. However, over the years, this field has progressed, and now large, well-powered and longitudinal studies have become more common. Coupled with advanced neuroimaging techniques and sophisticated statistical analyses, studies have been able to detect subtle relationships between exposure to less severe glycemic states (e.g. chronic hyperglycemia, mild-moderate hypoglycemia) and brain structural and functional patterns in youth with type 1 diabetes. In fact, some of these subtle differences even can be seen early in childhood after a relatively short duration of disease and limited exposure to hyperglycemia and hypoglycemia. Although these findings are intriguing, it is unclear what the overarching significance of these differences are for individuals, families, clinicians and scientists. This talk will attempt to place these findings in greater context by examining whether these brain imaging findings relate to cognitive function and risk for complications and comorbidities, and explore potential future work that could help better address these questions.

#### Optimizing Learning: Practical Management of T1D in Schools

**Speaker:** Luis Eduardo Calliari (Brazil)
School Performance in Children with Type 1 Diabetes

Speaker: Jannet Svensson (Denmark)

Background:

Type 1 diabetes (T1D) has been associated with poor school performance and lower score in neurocognitive tests. Furthermore, some magnetic resonance images have shown impaired growth in both white and gray matter volume, especially in children who have experience seizures. However, as treatment outcome has improved and both metabolic control and the number of children experiencing severe hypoglycemic events have been reduced also cognitive skills may have improved. Our aim was to test the influence of diabetes and acute complications on national school tests, by comparing children with and without t1D.

Methods

In Denmark all children in the public schools are tested in reading and mathematics when attending grades 2, 3, 4, 6, and 8. We combined data from the national childhood diabetes register (DanDiabKids) and the school register and designed a population-based retrospective cohort study from 2011 to 2015 including Danish public school-children. There were 524,764 math test scores and 1,037,006 test scores in readings available. We used linear regression models and compared outcomes with and without adjustment for socioeconomic characteristics.

Results

Altogether 631,620 children were included of those 2031 had T1D. The mean age was 10.3 (SD 2.4) years, mean diabetes duration 4.5 (SD 3.3) years and 51% was males. The mean total score was 56.1 (+/- 24.9). No difference was found between children with and without diabetes 0.24 (95%CI, −0.90 to 1.39) and 0.45 (95%CI, −0.58 to 1.49) with additional adjustment for socioeconomic status. There was a linear decrease in test score with increasing HbA1c of –1.59 (95% CI, –2.53 to –0.66) after adjustment, whereas prior ketoacidosis and severe hypoglycemia did not significantly affect test score.

Conclusion

Children with and without diabetes performed equally well in reading and mathematics. Socio-economic status partly explained the negative impact of high HbA1c and ketoacidosis on school performance.
Scientific Programme

Adolescent and parent perspectives on the use of financial incentives to promote diabetes self-care adherence in adolescents with type 1 diabetes
Abstract Presenter: Faisal Malik (United States)

The type 1 diabetes care index: a novel metric to assess delivery of optimal type 1 diabetes care
Abstract Presenter: Kathryn Obrynba (United States)

Novel application of artificial intelligence and machine learning methods to predict deterioration in long-term glycemic control in youth with type 1 diabetes
Abstract Presenter: Mark Clements (United States)

Driving better paediatric diabetes care in England and Wales - a decade of continuous improvement
Abstract Presenter: Megan Peng (United Kingdom)

Significant reduction of ketoacidosis at diabetes onset in children and adolescents with type 1 diabetes - results of the diabetes awareness campaign of children hospital and public health department of Stuttgart, Germany
Abstract Presenter: Martin Holder (Germany)

Use of insulin pumps combined with continuous glucose monitoring (CGM) in type 1 diabetes has similar impact on HbA1c as living in the least deprived areas of England and Wales: outcomes from the National Paediatric Diabetes Audit (NPDA) 2017-18
Abstract Presenter: Holly Robinson (United Kingdom)

Effect of exercise intensity on glucose requirements to maintain euglycaemia at high insulin levels in type 1 diabetes
Abstract Presenter: Vinutha B Shetty (Australia)

Closed-loop control (CLC) in teens and young adults improves glycemic control: results from a 6-month multicenter Randomized Clinical Trial (RCT)
Abstract Presenter: Elvira Isganaitis (United States)

Industry Satellite Symposium / Workshop
17:30 - 19:00
Constitution Ballroom

Satellite Symposium

Meetings
17:30 - 19:00
Republic Ballroom

JENIOUS Mentorship
Meetings
07:00 - 08:45  Fairfax

**T1D Exchange QI Collaborative Breakfast**

This event is open to all members of the collaborative program as well as to all Clinicians willing to learn more about the T1D Exchange QI Collaborative. It is open on a first-come/first-served basis and upon registration only. Should you wish to attend the early breakfast, please send an Email to Linda.Crasco@T1DExchange.org. You will receive a confirmation as soon as possible about your participation. Your registration is binding and valid until 6:55am. After this time, your right to claim the entrance in the room expires and all free places will be redistributed to last-minute attendees.

Meetings
08:00 - 08:45  Republic Ballroom

**Life for a Child Update**

**08:00 - 08:45**

**Life for a Child Update**

Speaker: Graham Ogle (Australia)

Plenary Session
09:00 - 10:30  Grand Ballroom

**Plenary Session III, New Thinking on Genetics, Insulin Resistance & Pediatric Diabetes**

**Chairs:**
Chair: Mark Sperling (United States)
Chair: Georgeanna J. Klingensmith (United States)

**09:00 - 09:45**

**Genetic Heterogeneity in Type 1 and Type 2 Diabetes**

Speaker: Pal Njolstad (Norway)

There are today more than 500 genetic loci associated with type 1 or type 2 diabetes. Although individual variants typically have only a modest effect on risk, when combined into a polygenic score, they offer increasing power to capture information on individual patterns of disease predisposition with the potential to influence clinical management. In pediatric diabetes care, it is important to recognize monogenic forms of diabetes among subjects with common type 1 and type 2 diabetes. Monogenic diabetes subtypes have specific treatments that differ from the standard care provided for type 1 and type 2 diabetes, making the appropriate diagnosis essential. A systematic approach to subjects who are newly diagnosed with diabetes can assist classification of common forms of diabetes and identify those in whom molecular investigation would be advantageous. There are clinical challenges to this end, including improving case-finding strategies, and understanding the interpretation of genetic variants as pathogenic, with clinically meaningful impacts. The main application of precision medicine is in the use of sulfonylurea agents in neonatal diabetes caused by mutations in K-ATP channel components and MODY due to mutations in HNF1A and HNF4A. These precision-based treatments not only achieve improved quality of life but also better glycemic control, and are important for precise genetic counselling and prediction of the development of complications.
Dissecting Gene-Environment Interactions in the Pathogenesis of Diabetes
Speaker: Ronald Kahn (United States)

Industry Exhibition
10:15 - 16:15 Back Bay

Exhibition

Symposium
11:00 - 12:30 Grand Ballroom

Clinical Science Symposium: The Islets, the Microbiome & More

Chairs:
Chair: Maria Craig (Australia)
Chair: Catherine Pihoker

Expanding Beta Cell Mass
Speaker: Rohit Kulkarni (United States)
This talk will provide a broad background on the significance of growth factor signaling in the regulation of islet biology especially in the context of islet cell regeneration. The discussion will focus on the different approaches to reverse and/or halt the progression of type 1 diabetes. The talk will include recent work on studies aimed at understanding the consequences of regenerating beta cells prior to immune cell invasion on the progression of type 1 diabetes.

Understanding the Microbiome
Speaker: Emma Hamilton-Williams (Australia)
The gut microbiota has a potent interaction with the development of the immune system and may influence risk of many immune-mediated diseases. Changes in the gut microbiota have been implicated in the pathogenesis of type 1 diabetes (T1D). The causes and functional consequences of an altered microbiota to the host immune response against the pancreas in T1D is unknown. We have performed a multi-omic analyses of human stool samples to link alterations in the gut microbiota in T1D with intestinal permeability and pancreatic function. Using a meta-proteomic analysis of 101 stool samples from subjects with recent-onset T1D, islet autoimmunity (seropositive) and low-risk individuals we have identified significant changes in host proteins associated with inflammation, exocrine pancreas function and gut barrier function in individuals with new-onset T1D and high-risk subjects with islet autoimmunity. Integration of the meta-proteomic data with bacterial abundance information identified specific microbial taxa correlated with these differentially abundant proteins. These data support the notion that T1D patients have increased intestinal inflammation and decreased barrier function and that these changes may be linked to disease progression. They also confirmed that pancreatic exocrine dysfunction occurs in new-onset T1D patients and show that this dysfunction is present in high-risk individuals prior to disease onset. In animal studies, we have shown that defects in the immune system linked to T1D genetic risk also lead to functional changes in the gut barrier and an altered microbiota. Together our findings show that the gut microbiota is intrinsically linked to the T1D phenotype and altered gut barrier function.
Lessons Learned from Pancreatic Biopsies (DiViD): Putting it all together
Speaker: Lars Krogvold (Norway)

The cause of type 1 diabetes (T1D) is still unknown, partly due to lack of studies of fresh pancreatic tissue from patients at diagnosis. The aim of the Diabetes Virus Detection Study (DiViD) was to collect pancreatic tissue of good quality and sample size with laparoscopic tail resection from live adult individuals with newly diagnosed T1D. In total, six patients (three men, three women), ranging from 24-35 years were included in the study. A laparoscopic distal pancreatic tail resection was performed under general anaesthesia median five weeks after the diagnosis of T1D. The collected specimens were of excellent quality obtained in an optimal window for studies of the pancreatic pathology. To enable a wide variety of different future analyses, the tail was divided, processed and stored in a systematic way. In close collaboration with highly competent research groups around the world, the DiViD study has contributed to new knowledge on the pathological processes in pancreas at onset of T1D. The main focus have been to explore secrets hidden in the islets of Langerhans and the beta-cell, but also examinations of exocrine pancreas and the presence of immunity cells in pancreas have been emphasized. There are so far several major findings:

- Enterovirus are present in the islets
- Anti-viral tissue responses and increased cell stress were observed in the islets
- Stratification of patients according to their insulitic profile (CD20 Hi and Lo)
- Insulitic islets from recent-onset T1D subjects show overexpression of ISGs, with an expression pattern similar to that seen in islets infected with virus or exposed to IFN-γ/interleukin-1β or IFN-α
- PDL1 is expressed in the islets of people with type 1 diabetes, possibly to attenuate the autoimmune assault

Conclusions: The pancreatic biopsies from pancreas in newly diagnosed T1D have confirmed many findings from autopsy studies, but also created new and exciting knowledge challenging “common wisdom” in T1D pathogenesis.
**The US Perspective: Update from the T1D Exchange**

Speaker: Kellee Miller (United States)

This presentation provides a snapshot of the profile of youth and adolescents with type 1 diabetes (T1D) in the United States using data from approximately 16,000 youth, adolescents and young adults age 1 to 29 years with a diabetes duration of at least 1 year in T1D Exchange clinic registry collected between 2016 and 2018 (mean age 16±5 yrs, duration 9±5 yrs). These data also were compared with registry data collected between 2010 and 2012 (N=~ 16,000, mean age 15±6 yrs, mean diabetes duration 7±5 yrs). Only 17% of youth are meeting the ISPAD target of HbA1c < 7.5% and 13% of young adults are meeting the ADA target of < 7.0%. Use of an insulin pump increased slightly from 55% in 2010-2012 to 63% in 2018-2018. Use of a continuous glucose monitor (CGM) increased exponentially from 4% to 27% with the largest increase occurring in youth < 6 years of age (4% to 51%). Around 39% of youth and 50% of young adults (defined as 18 to < 30 years) are classified as overweight or obese (BMI >85th percentile). Participants using a CGM have lower HbA1c across all youth and young adult age groups (Table). The use of CGM differs by race/ethnicity (8% in non-Hispanic black, 18% in Hispanic and 30% in non-Hispanic white) and insurance status (14% for public insurance and 32% for private). The average HbA1c in youth differs when stratified by socio-economic status and race/ethnicity but across all SES levels a lower HbA1c with use of a CGM is observed. CGM use has increased drastically over past 5 years in youth and adults in T1DX registry with observed improvements in glycemic control in CGM users. However, racial disparities in technology use are evident and independent of annual household income.

**Developing Countries and Global Perspectives**

Speaker: Graham Ogle (Australia)

T1D is challenging to manage even in well-resourced settings. In less-resourced countries, government services usually provide little or no supplies, and health professionals are rarely experienced in T1D care. Self-monitoring of blood glucose (SMBG) with even 2 tests/day is generally more expensive than insulin, and so beyond the reach of many. Young people frequently die at T1D onset, misdiagnosed with another condition, or die soon afterwards from acute complications. Survivors usually have high HbA1cs, poor quality of life, and develop early and devastating complications.

The good news is the situation is quickly improving in many nations, through the efforts of ‘local champions’ - dedicated health professionals and lay advocates, often supported by Life for a Child (LFAC), Changing Diabetes in Children (CDiC) and other programs. LFAC and CDiC are, through local centres, assisting the care of 40,000+ young people in 45+ countries. LFAC has developed a concept of ‘Intermediate Care’: a care level in-between the ‘Comprehensive, Guidelines-based Care’ practised in well-resourced nations, and ‘Minimal Care’ that was occurring in the past. This approach, using basal-bolus human insulin, SMBG 2-4x per day, HbA1c testing and, critically, thorough diabetes education, is cost-effective and can lead to HbA1c clinic means of 8-9.5% with infrequent mortality. Advocacy can be made to respective governments to provide this care and establish sustainability.

Aside from the provision of care, studies to determine incidence, prevalence, and types of diabetes are important as these vary widely around the globe. Teaching and training of health professionals is also key, and ongoing mentoring is very valuable. Many ISPAD members are involved in such initiatives. Much remains to be done, and more resources are needed. However, it is conceivable to imagine a time in the medium-term future where a good level of care is provided to the vast majority of young people who need it.
45th Annual Conference of the International Society for Pediatric and Adolescent Diabetes,
October 30 - November 2, 2019,
Boston, USA

Scientific Programme

T1D Recipe for Success: The Swedish Model
Speaker: Karin Akesson (Sweden)  12:00 - 12:30

Oral Session
11:00 - 12:30  Republic Ballroom

Oral Session V, Behavioral Health and Young Adulthood

Chairs:
Chair: Jill Weissberg-Benchell (United States)
Chair: Maartje de Wit (Netherlands)

Psychosocial screening in routine clinical care of youth with diabetes  11:00 - 11:11
Abstract Presenter: Alan Delamater (United States)

Diagnostic accuracy of depression screening tools for adolescents with type 1 diabetes  11:11 - 11:22
Abstract Presenter: Arwen Marker (United States)

Pre-empting challenges of adolescence: effects and theoretical frameworks of psychosocial interventions targeting pre-teens with type 1 diabetes  11:22 - 11:33
Abstract Presenter: Regitze Anne Saurbrey Pals (Denmark)

Characteristics and metabolic outcome of children and adolescents with type 1 diabetes supported by psychological care in a real-world setting  11:33 - 11:44
Abstract Presenter: Angela Galler (Germany)

The association of mindfulness with depression, diabetes distress, and diabetes-related outcomes in adolescents with type 1 diabetes (T1D)  11:44 - 11:55
Abstract Presenter: Hiba Abujaradeh (United States)

Illness identity and diabetes-specific functioning across adolescence and emerging adulthood: a four-wave longitudinal study  11:55 - 12:06
Abstract Presenter: Eveline Goethals (United States)

Financial stress characteristics in emerging adults with type 1 diabetes  12:06 - 12:17
Abstract Presenter: Julia Blanchette (United States)

Is there an association between celiac disease and depression in children and young adults with type 1 diabetes? A multicentre approach  12:17 - 12:28
Abstract Presenter: Stefanie Lanzinger (Germany)

Industry Satellite Symposium / Workshop
12:45 - 14:15  Constitution Ballroom

Satellite Symposium

Industry Satellite Symposium / Workshop
12:45 - 14:15  Fairfax

Industry Workshop
Meetings
13:00 - 14:00
Room Hampton

Dietitians Network meeting

Posters
14:30 - 15:30

PT18, Poster Tour 18 - Psychosocial Issues, Education, Nutrition, and Exercise

Chairs:
Chair: Tim Skinner (Australia)

- Outpatient diabetes-specific quality of life screening: feasibility and outcomes in parents of children aged 2-7 with T1D
  Abstract Presenter: Michael Yao (United States)

- The WHO-5 Index in Danish adolescents with type 1 diabetes and the associations with disordered eating, emotional symptoms, quality of life and hemoglobin A1c
  Abstract Presenter: Niels Birkebaek (Denmark)

- Symptoms of eating disorders, quality of life, emotional difficulties and metabolic control in Danish adolescents with type 1 diabetes
  Abstract Presenter: Niels Birkebaek (Denmark)

- Virtual education: prevalence in youth with diabetes and their characteristics
  Abstract Presenter: Christine March (United States)

- Families with pediatric type 1 diabetes: a comparison with the general population on child well-being, parental distress and parenting behavior
  Abstract Presenter: Eveline Goethals (United States)

- Objectively downloaded insulin pump data support maternal self-report of maintaining high blood glucoses
  Abstract Presenter: Holly O'Donnell (United States)

- The associations between knowledge and health beliefs/attitudes regarding gestational diabetes (GDM) in American Indian/Alaska Native (AI/AN) Adolescent/Young Adult (AYA) daughters at risk for GDM and their mothers: a dyadic analysis
  Abstract Presenter: Susan Sereika (United States)

- Do clinic-based interventions make a difference to the psychological wellbeing of youth and young adults with type 1 diabetes?
  Abstract Presenter: Joanna McClintock (New Zealand)

- Parental anxiety after five years participation in a longitudinal follow up study of children at high risk for type 1 diabetes - The DiPiS study
  Abstract Presenter: Jessica Melin (Sweden)

- When adolescents with type 1 diabetes drink alcohol, do they make safe choices around diabetes care?
  Abstract Presenter: Rachel Wasserman (United States)
Scientific Programme

PT19, Poster Tour 19 - Psychosocial Issues, Education, Nutrition, and Exercise

Chairs:
Chair: Elisabeth Jelleryd (Sweden)

What foods cause problematic glucose excursions in young people with type 1 diabetes and what strategies do families use to manage this?
Abstract Presenter: Tenele Smith (Australia)

Dietary response to hypoglycemia in adolescents with type 1 diabetes in the Flexible Lifestyle Empowering Change (FLEX) Intervention
Abstract Presenter: Daria Igudesman (United States)

Hypoglycemia reduction using high-carb diet in adolescents with type 1 diabetes wearing a continuous glucose monitoring during a sport camp
Abstract Presenter: Sara Giorda (Italy)

A family-focused approach to healthy lifestyle choices for adolescents with type 1 diabetes
Abstract Presenter: Fiona Scott (Australia)

Quality of infants’ diet does not relate to who has type 1 diabetes in the family
Abstract Presenter: Rachel J Battersby (Australia)

Translation, cultural adaptation and validation of the Ped Carb Quiz (PCQ) in Chilean children, youths and adults with type 1 diabetes
Abstract Presenter: Maria Teresa Onetto (Chile)

Dietary intake and physical activity of a well-controlled group of children with type 1 diabetes mellitus
Abstract Presenter: Melina Karipidou (Greece)

The role of zinc supplementation as an adjuvant therapy for pediatric patients with β-thalassemia major complicated with diabetes mellitus
Abstract Presenter: Nancy Elbarbary (Egypt)

Automation of exercise management by an ideal artificial pancreas (AP) system: perspectives from youth with type 1 diabetes (T1D)
Abstract Presenter: Lindsay Roethke (United States)

Partial remission in childhood onset diabetes type 1 - does physical activity matter?
Abstract Presenter: Milena Jamiołkowska (Poland)

PT17, Poster Tour 17 - Diabetes Acute and chronic complications and Late breakers

Chairs:
Chair: Robert Hoffman (United States)

Thrombin generation in children and adolescents with type 1 diabetes at type 1 diabetes onset
Abstract Presenter: Hildegard Jasser-Nitsche (Austria)
Scientific Programme

Adolescents and young adults with type 1 diabetes have increased left ventricular electromechanical discoordination: cardiac MRI report from emerald study
Abstract Presenter: Michal Schäfer (United States)

TNF alpha and VEGF as predictors of diabetic retinopathy
Abstract Presenter: Iwona Ben-Skowronek (Poland)

Visfatin level and its relationship to subclinical atherosclerosis in children with type 1 diabetes
Abstract Presenter: Hoda Atwa (Egypt)

Weight status by body mass index percentile (BMI %ile) vs. percent body fat (%BF) in youth with type 1 diabetes (T1D)
Abstract Presenter: Aishwarya Sharma (United States)

Bone microarchitecture and estimated bone strength in children with type 1 diabetes mellitus
Abstract Presenter: Gitte Fuusager (Denmark)

Five year cohort profile: the Environmental Determinants of Islet Autoimmunity (ENDIA) study
Abstract Presenter: Jenny Couper (Australia)

Early onset type 1 diabetes - is there a specific genetic architecture?
Abstract Presenter: Ana Laura Fitas (Portugal)

Immunological and molecular markers for the definition of type 1 diabetes endotypes in childhood and adolescence
Abstract Presenter: Raffaella Di Tonno (Italy)

Glycaemic responses to exercise with and without repeated sprints in a free-living setting in adolescents and young adults with Type 1 diabetes
Abstract Presenter: Wayne Soon (Australia)

Poster Tour
14:30 - 15:30

PT20, Poster Tour 20 - Diabetes Care and New Therapeutics
Chairs: Catarina Limbert (Portugal)

Effects of switching from insulin glargine to insulin degludec in patients with type 1 diabetes, a hospital based study in Muscat, Oman
Abstract Presenter: Hala AlShaikh (Oman)

The type 1 diabetes composite score: an innovative metric for measuring patient care outcomes beyond HbA1c
Abstract Presenter: Justin Indyk (United States)

Basal insulin to total insulin dose proportion and glycemic control in children and adolescents with type 1 diabetes in Poland
Abstract Presenter: Agata Chobot (Poland)
Scientific Programme

The impact of a team based quality improvement initiative on clinic HbA1c levels in a large UK paediatric diabetes service
Abstract Presenter: Fulya Mehta (United Kingdom)

Use of home and ambulatory blood pressure monitoring in the SWEET diabetes centers: an international SWEET database survey
Abstract Presenter: Andriani Vazeou (Greece)

Blood pressure methodology in the SWEET Diabetes Centers: an international SWEET Database survey
Abstract Presenter: Andriani Vazeou (Greece)

Real-world evidence in type 1 diabetes (T1D): glycemic control and disease management of persons with T1D from global registries
Abstract Presenter: Tadej Battelino (Slovenia)

A goup curriculum for teens with type 1 diabetes (T1D) improves transition readiness and diabetes self-efficacy: results of a pilot randomized controlled trial (RCT)
Abstract Presenter: Katharine Garvey (United States)

What is the best approach to implementing a National Paediatric Diabetes Audit in Ireland? A realist synthesis of existing evidence
Abstract Presenter: Sinead McGlacken-Byrne (Ireland)

Barriers to diabetes device uptake: examining adolescents' unique perspective
Abstract Presenter: Jessie Wong (United States)

Posters

PT24, Poster Tour 24 - Diabetes in Developing Countries

 Chairs: Chair: Banshi Saboo (India)

Characteristics of type 1 diabetes mellitus in children and adolescents with Down’s syndrome in a non-Caucasian population
Abstract Presenter: Luis Eduardo Calliari (Brazil)

Improvement in metabolic control in migrant children with type 1 diabetes moving from Central America to Chile
Abstract Presenter: Rossana Roman (Chile)

“Insulin Akshayapatra” for childhood onset type diabetes in India: three decades [1987 - 2019] dreams, challenges, failures and successes from India
Abstract Presenter: Keerthana Haridas (India)

Type 1 diabetes mellitus in Pointe-Noire: epidemiology, glycemic control, outcomes and challenges
Abstract Presenter: Charley Loumade Elenga-Bongo (Congo)

Probability of MODY in a cohort of 209 Brazilians with young onset diabetes
Abstract Presenter: Milena Gurgel Teles (Brazil)
Scientific Programme

The positive effects of family functioning and resilience on health outcomes in Chinese youth with type 1 diabetes
Abstract Presenter: Dan Luo (China)

From toy to tool: using water beads for insulin storage in Haiti
Abstract Presenter: Molly Gilligan (United States)

Assessment of cognitive dysfunction in a group of Moroccan children and adolescents with type 1 diabetes mellitus
Abstract Presenter: Kaltoum Boutahar (Morocco)

Oral diseases in a young population of patients living with Type 1 Diabetes in Cameroon: Epidemiological and clinical aspects
Abstract Presenter: Adelle Bodieu Chetcha (Cameroon)

Poster Tour
14:30 - 15:30

PT21, Poster Tour 21 - Telemedicine & Digital Support, Pumps & CGM, and Automated Insulin Delivery

Chairs:
Chair: Dick Mul (Netherlands)

Contributions and limits of Integrated Telemedicine in diabetes care and education program: perceptions of families from Chilean remote rural area
Abstract Presenter: Julie Pelicand (Chile)

Lessons learned from using telemedicine with youth with type 1 diabetes and families
Abstract Presenter: Tyler K Reznick-Lipina (United States)

Leveraging the Project ECHO model for type 1 diabetes (T1D) to democratize specialty knowledge in underserved T1D communities
Abstract Presenter: Nicolas Cuttriss (United States)

Real-world application of an artificial intelligence model predicting short-term change in glycemic control in youth with type 1 diabetes
Abstract Presenter: Mark Clements (United States)

Provider perceived barriers to technology use in pediatric patients with type 1 diabetes
Abstract Presenter: David Tsai (United States)

How does video-counseling work under real-life conditions? Results from the VIDIKI study, a multicenter, controled study evaluating the impact of monthly video consultations for children with type 1 diabetes using a continuous glucose monitoring system
Abstract Presenter: Simone von Sengbusch (Germany)

VIDIKI: a multicenter, controled study assessing the impact of monthly video consultations for children with type 1 diabetes compared to usual care
Abstract Presenter: Simone von Sengbusch (Germany)

A pilot non-inferiority randomized controlled trial to assess automatic adjustments of insulin doses for patients with type 1 diabetes on multiple daily injection therapy
Abstract Presenter: Anas El Fathi (Canada)
Scientific Programme

Real-world glycemic profiles and insulin use patterns of 12,796 pediatric, adolescent and young adult patients with Type 1 diabetes using the Omnipod® insulin management system with cloud-based data management
Abstract Presenter: Jennifer Layne (United States)

Infrequent uploading of insulin pump and glucose sensor data due to motivation rather than knowledge for families living with paediatric type 1 diabetes
Abstract Presenter: Alexander Daniel Chesover (Canada)

Poster Tour
14:30 - 15:30

PT22, Poster Tour 22 - Telemedicine & Digital Support, Pumps & CGM, and Automated Insulin Delivery

Chairs:
Chair: Roque Cardona-Hernandez (Spain)

Safe use of eversense CGM in children and adolescents: the fear no hypo study
Abstract Presenter: Torben Biester (Germany)

Strategies to enhance new CGM use in early childhood (SENCE): results from a randomized clinical trial of continuous glucose monitoring (CGM) in young children with type 1 diabetes (T1D)
Abstract Presenter: Linda DiMeglio (United States)

Loss of continuous glucose monitor coverage is associated with an increase in HbA1c
Abstract Presenter: Ananta Addala (United States)

Time in range in a large cohort of children with type 1 diabetes using glucose sensor and multiple daily injection or insulin pump treatment
Abstract Presenter: Valentino Cherubini (Italy)

Correlational analysis of 5AM glucose in the Tidepool Big Data Donation Project
Abstract Presenter: Lisa Norlander (United States)

An ideal artificial pancreas (AP) system: comparing preferences of youth with type 1 diabetes (T1D) and parents
Abstract Presenter: Persis Commissariat (United States)

Pros and cons of Minimed 670G hybrid closed-loop system: first 6-month experience in Italy
Abstract Presenter: Andrea Scaramuzzia (Italy)

Feasibility of a basal rate and carb ratio learning algorithm for closed-loop insulin delivery systems (artificial pancreas)
Abstract Presenter: Emilie Palisaitis (Canada)

Open-source hybrid closed-loop android artificial pancreas system: IN SILICO clinical trials with the UVA/Padova type 1 diabetes simulator proof safety and efficacy
Abstract Presenter: Lenka Petruzelkova (Czech Republic)

Safety and efficacy of initializing a Control-IQ automated insulin delivery system with total daily insulin
Abstract Presenter: Marc Breton (United States)
**PT23, Poster Tour 23 - Childhood Obesity & Type 2 Diabetes, Associated Diseases, and Other Forms of Diabetes**

**Chairs:**
Chair: David Repaske (United States)

- **Targeted sequencing identified rare genetic variants in non-syndromic early-onset obesity among Taiwanese children**
  Abstract Presenter: Meng-Che Tsai (Taiwan, Republic of China)

- **Spinning the habit-loop: childhood obesity**
  Abstract Presenter: Ankit Khanna (United Kingdom)

- **Body fat and insulin sensitivity predict endothelial function and subendocardial viability in healthy, non-hispanic white adolescents**
  Abstract Presenter: Robert Hoffman (United States)

- **Leptin gene methylation status in Egyptian infants**
  Abstract Presenter: Omneya Magdy Omar (Egypt)

- **High-fat diet accelerates extreme obesity with hyperphagia and severe glucose intolerance in female heterozygous Mecp2 null mice**
  Abstract Presenter: Shota Fukuhara (Japan)

- **The usefulness of genotyping of celiac disease specific HLA among children with type 1 diabetes in various clinical situation**
  Abstract Presenter: Grazyna Deja (Poland)

- **Is there a connection between type 1 diabetes and autism? The prevalence of autism in children with type 1 diabetes and differences in phenotype and biomarkers at diabetes diagnosis**
  Abstract Presenter: Jasaman Tojjar (Sweden)

- **Anti-GAD associated auto-immune neurological disease in children with type 1 diabetes mellitus: a case series from Scotland**
  Abstract Presenter: Julia Fuchs (United Kingdom)

- **The relationship between insulin-like growth factor-1 and markers of bone turnover in children and adolescents with T1D for > 1 year**
  Abstract Presenter: Jesper Johannesen (Denmark)

- **Thrombogenicity in children with type 1 diabetes - a case control study**
  Abstract Presenter: Hanna Dis Marjorsdottir (Norway)

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**Late Breaking Posters on Display only**

- **Investigation of appropriate timing of additional insulin dosing for fat and protein in children with type 1 diabetes using multiple daily injections**
  Abstract Presenter: Anne Marie Frohock (United Kingdom)
Scienfific Programme

Glycemic control and quality of life in immigrant and italian children and adolescents with type 1 diabetes and in their parents
Abstract Presenter: Barbara Predieri (Italy)

Using a culturally and linguistically competent health promotion approach to adapt and validate the preconception counseling READY-girls program for Spanish-speaking teens with diabetes
Abstract Presenter: Angelica Maria Escobar (United States)

Would patients on Multiple Daily Injection (MDI) insulin regimens administer an extra injection for high-fat, high-protein (HFHP) meals?
Abstract Presenter: Anne Marie Frohock (United Kingdom)

25OHD in T1D children and adolescents in Finland (T1DD)
Abstract Presenter: Mari-Anne Pulkkinen (Finland)

Experiences of young professionals with type 1 diabetes mellitus launching into the workplace
Abstract Presenter: Jennifer Saylor (United States)

Prevalence and risk factors of thyroid dysfunction and thyroid autoimmunity in children with newly developed type 1 diabetes mellitus
Abstract Presenter: Jeesuk Yu (Korea, Republic of)

Towards psycho-socio-economic (PSE) challenges: the Impact of patient-parents multi-sessional counseling approaches in type 1 diabetes (T1DM)
Abstract Presenter: Swati Patel (India)

Paediatric Type 2 diabetes in a single centre in East London in the period 2009-2018
Abstract Presenter: Evelien Gevers (United Kingdom)

To study the metabolic outcome in type 1 diabetic patients of different age group through DPV software
Abstract Presenter: Maitry Pancholi (India)

PHQ and CDI before and after 10-week curriculum-based group intervention in adolescents with T1D
Abstract Presenter: Cynthia Muñoz (United States)

Improving outcomes for young people with type 2 diabetes mellitus in East London
Abstract Presenter: Elizabeth Nash (United Kingdom)

Role of Acarbose in persons with type-1 diabetes: a multicentre study in India
Abstract Presenter: Malay Parekh (India)

Posters on Display
14:30 - 15:30

A qualitative study of schools that support students with type 1 diabetes
Abstract Presenter: Leanne Fried (Australia)

Motivational interview to improve metabolic control in adolescents with poorly controlled type 1 diabetes: A randomized controlled trial
Abstract Presenter: Mari-Anne Pulkkinen (Finland)
Scientific Programme

Quality of life related to health according to the perception of children between 8 and 12 years old with type 1 diabetes and their parents in a public hospital in Córdoba, Argentina
Abstract Presenter: Maria Laura Macias (Argentina)

Mind the gap [Psychological Bridge in DM1]
Abstract Presenter: Ankit Khanna (United Kingdom)

Carbohydrate counting: evaluation of knowledge and practices in a group of patients with continuous insulin infuser
Abstract Presenter: Maria Clara Gabras (Argentina)

A global partnership approach to delivering education on the management of type 1 diabetes in childhood in Botswana
Abstract Presenter: Kate Wilson (United Kingdom)

ESPE e-learning in pediatric endocrinology and diabetes
Abstract Presenter: Sze May Ng (United Kingdom)

Person-centred education to female adolescents with type 1 diabetes
Abstract Presenter: Anna Lena Brorsson (Sweden)

Comparative analysis between the expected and actual nutrients content of blenderized-formulated tube feeds administered in Lagos University Teaching Hospital, Lagos, Nigeria
Abstract Presenter: Joseph Odolomaran Akuirene (Nigeria)

The inhibitory effect of Surya Namaskar yoga therapy with Aloe-Vera juice on the increase in postprandial blood glucose in type 2 diabetic patients in west Delhi metro population
Abstract Presenter: Pardeep Kumar (India)

Altitude hiking in non-experienced people with type 1 diabetes: importance of CGM, prior preparations and insulin adjustments to minimize the risk of hypoglycaemia
Abstract Presenter: Daniela Rojas Jiménez (Costa Rica)

Independent determinants of urinary albumin excretion and confounding variables in diabetic patient
Abstract Presenter: Neupane sunita (Nepal)

Young adult responses to the CANDID survey: health outcomes of childhood diabetes diagnosed 1990-2009
Abstract Presenter: Alison Pryke (Australia)

A study of +49 CTLA 4 genetic polymorphism in type 1 diabetes of gujarat population of India
Abstract Presenter: Vishakha Chavda (India)

Antiviral treatment of newly diagnosed children and adolescents with type 1 diabetes. The DiViD intervention trial
Abstract Presenter: Ida Maria Mynarek (Norway)

Successful treatment outcome of invasive mucormycosis in diabetes children by conventional antifungal therapy in resource constraint situation
Abstract Presenter: Jaida Manzoor (Pakistan)

Association of body fat percentage by bioelectric impedance analysis with diabetic ketoacidosis in Kashmiri patients with type 1 diabetes
Abstract Presenter: Ovais Ahmad Peerzada (India)
Scientific Programme

An unusual case of an exclusively vegan child with diabetic 'ketoacidosis'
Abstract Presenter: Sotiris Konstantakopoulos (Greece)

Bilateral cataract as the first feature of type 1 diabetes in a 12 year old girl: a case report
Abstract Presenter: Petra Konecna (Czech Republic)

Amputation in a Ghanaian teenager with type 1 diabetes mellitus: a case report
Abstract Presenter: Emmanuel Ameyaw (Ghana)

Is menarche in type 1 diabetes still delayed?
Abstract Presenter: Naoko Nishikawa (Japan)

Optimal endocrinology and psychology care across the first seven years of type 1 diabetes diagnosis: a retrospective study of electronic health record data
Abstract Presenter: Julia Price (United States)

Keeping the ship on course: assessing a transition program model
Abstract Presenter: Gina Marino (United States)

Audit of glycemic control in patients with type 1 diabetes referred to a pediatric clinic in a specialized center in Kuwait
Abstract Presenter: Hessa Al Kandari (Kuwait)

Parental anxiety about hypoglycemia of children and adolescents with type 1 diabetes mellitus (T1DM) and the associated factors
Abstract Presenter: Kyriaki Karavanaki (Greece)

Uptake of flash glucose sensor technology within a specialist paediatric diabetes service
Abstract Presenter: Heather Thom (United Kingdom)

Quality improvement: coordination of pediatric diabetes care and education through the creation of a pediatric diabetes council
Abstract Presenter: Steven Ghanny (United States)

Comparison of basal insulin in adolescents with type 1 diabetes during a school camp. The GLiDE Study
Abstract Presenter: Davide Tinti (Italy)

To evaluate the efficacy and safety of the IDegAspart in type 1 diabetic patients
Abstract Presenter: Rutul Gokalani (India)

Clinical trial of the use of sitagliptin in pediatric patients with T2D: baseline characteristics
Abstract Presenter: Muhammad Yazid Jalaludin (Malaysia)

The immediate and medium-term prognosis of newborns of diabetic mothers at EHS Nouar Fadéla. Preliminary findings; Oran, Algeria
Abstract Presenter: Djamila Bouabida (Algeria)

Experience and challenges in managing type I diabetes at low resource setting - children and youth
Abstract Presenter: Jyoti Agrawal (Nepal)

Interactive online education is comparable to in-person training to teach insulin adjustment skills in a low-resource setting: a pilot study with non-communicable disease providers in Rwanda
Abstract Presenter: Edison Rwagasore (Rwanda)
Morbidity and mortality of newborns born to from mothers with or without diabetes at EHS "Nouar Fadela" in Oran Algeria
Abstract Presenter: Djamila Bouabida (Algeria)

Partial clinical remission in newly diagnosed children with type 1 DM seen at the Lagos University Teaching Hospital, South Western Nigeria: a retrospective preliminary report
Abstract Presenter: Elizabeth Oyenusi (Nigeria)

Acute complications in children with type 1 diabetes mellitus attending Alexandria University Children's Hospital
Abstract Presenter: Dina Fawzy (Egypt)

Instructional therapeutic play (ITP): a play-based self-care intervention to educate children with type 1 diabetes (T1D) in developing countries
Abstract Presenter: Rebecca Ortiz La Banca (United States)

Metabolic profile worsens in indigenous children at very high altitudes
Abstract Presenter: Valeria Hirschler (Argentina)

Identification of novel variants in genes associated with neonatal diabetes in a Brazilian cohort
Abstract Presenter: Milena Gurgel Teles (Brazil)

Evaluation of near me video consultation for the paediatric diabetes clinic in Highland, Scotland
Abstract Presenter: Louise Ferguson (United Kingdom)

Does commencing on an insulin pump improve glycaemic control in paediatric patients?
Abstract Presenter: Miles Riddle (United Kingdom)

Evaluation of the quality of life and patient satisfaction using external insulin pump therapy Medtronic 640G vs Minimed Veo in people living with type 1 diabetes: an Indian scenario
Abstract Presenter: Apoorva Gomber (India)

Are glucose monitoring systems beneficial in a real-world environment?
Abstract Presenter: Sonya Fraser (New Zealand)

Continuous glucose monitoring / flash glucose monitoring in type 1 DM. Local unit experience at Glan Clwyd Hospital, Wales
Abstract Presenter: Shailendra Singh Rajput (United Kingdom)

HbA1c progression and risk factor analysis in youth with type 2 diabetes
Abstract Presenter: Lily C. Chao (United States)

Type 2 diabetes clinic improves quality of life, patient satisfaction and BMI
Abstract Presenter: Nancy Chang (United States)

Insulin resistance in children and adolescents infected with helicobacter pylori
Abstract Presenter: Omneya Magdy Omar (Egypt)

The influence of glycemic control on the menstrual disturbances in patients diagnosed with type 1 diabetes before menarche
Abstract Presenter: Rishi Shukla (India)

The frequency of celiac disease in patients with type 1 diabetes - assessment of the 7-year observational study
Abstract Presenter: Artur Groszek (Poland)
Scientific Programme

Prevalence of overweight and obesity among children with type 1 diabetes treated with a continuous subcutaneous insulin infusion and its clinical impact on diabetic control
Abstract Presenter: Magdalena Dymińska (Poland)

Screening for complications and associated conditions in children with type 1 diabetes mellitus in the Netherlands: big differences in a small country
Abstract Presenter: Rosaline Mentink (Netherlands)

Wolcott Rallison in two families in Alexandria University Children’s Hospital: same gene, different variants
Abstract Presenter: Yasmine Abdelmeguid (Egypt)

A case of double diabetes in a child presenting with conditions of both diabetic ketoacidosis and hyperglycemic hyperosmolar syndrome
Abstract Presenter: Kenichi Miyako (Japan)

High insulin requirements in a lean female with type 1 diabetes
Abstract Presenter: Melissa Crocker (United States)

An unusual cause of diabetes found in a consanguineous family from Kurdistan: H syndrome caused by a pathogenic variant in the SLC29A3 gene
Abstract Presenter: Shenali Anne Amaratunga (Czech Republic)

Symposium
15:45 - 17:15
Grand Ballroom

ATTD SESSION - Technologies and Diabetes - where are we today?

Chairs:
Chair: Tadej Battelino (Slovenia)
Chair: Mark Sperling (United States)
Why do we need Decision Support System?  
Speaker: Lori Laffel (United States)  
15:45 - 16:05

The overwhelming majority of pediatric, adolescent, and young adult patients with diabetes are unable to achieve glycemic targets as recommended by ISPAD, ADA, and other national and international diabetes organizations. Indeed, less than 1 in 5 such patients achieve glycemic targets, despite multiple advances in insulin formulations, insulin delivery systems, advanced glucose monitoring techniques, and even the emergence of some automated insulin delivery systems. Further, it is difficult to achieve glycemic targets during periods of rapid growth and development, when insulin adjustments may be needed more frequently than at the usual 3-monthly intervals. In addition, there is a shortage of well-trained experts in pediatric diabetes across the globe who have the knowledge and the time to review detailed glucose monitoring and insulin delivery data. There is an extraordinary increase in the amount of data to review, given that continuous glucose monitoring devices provide 288 glucose readings each day and there is extensive insulin dosing data from basal-bolus insulin delivery via an insulin pump and even with the use of memory pens. Despite inclusion of multiple disciplines in pediatric diabetes care, incorporating nurses, dietitians, exercise physiologists, psychologists, and more, it remains difficult to ensure the timely delivery of and updates to intensive insulin therapy. Thus, therefore is a need for automated approaches that can analyze data and offer clinical decision support. Automated systems can potentially receive and analyze data at frequent intervals and perform such tasks remotely, to complement the face-to-face efforts of the pediatric diabetes team. It is likely that pediatric providers and families of pediatric patients will welcome such remote dosing support as they will be grateful to save time and their resources by potentially reducing the frequency of in-person visits. Decision support guiding insulin dose adjustments can address the rapidly changing needs of growing pediatric and adolescent patients with type 1 diabetes, potentially leading to their improved glycemic control and quality of life.
**Advice4U: Results of a multinational multicenter study**

**Speaker:** Revital Nimri (Israel)
**Speaker:** Gregory Forlenza (United States)

**Nimri R\(^1\) & Forlenza G\(^7\)**

**OBJECTIVE**

Decision support systems are emerging as a treatment tool for persons with T1D and healthcare team members. The Advice4U study aims to evaluate the safety and efficacy of DreaMed Advisor Pro algorithm to frequently adjust insulin doses in young persons with T1D using sensor augmented pump therapy.

**RESEARCH DESIGN AND METHODS**

The ADVICE4U (NCT0300806) was a 7-month, multicenter, multinational, open label, parallel (2-arm), randomized controlled prospective, non-inferiority study. One hundred and twelve participants with T1D using insulin pump therapy and continuous glucose monitoring (CGM) or willing to use CGM, ages ≥ 10 to 21 years, with HbA1c 7-10%, were recruited. After 3-4 weeks of run-in period, participants were randomly assigned (according to age and initial A1c) to either the intervention group (DreaMed Advisor Pro) or control group (medically guided recommendations). Insulin dose adjustments were made every 3 weeks, in both groups, based upon collection of adequate CGM and pump data uploads from home or during regular clinic visits (via Glooko App or PC). Primary efficacy endpoint is percentage of sensor glucose readings within 70-180 mg/dl. Primary safety endpoint is percentage of sensor glucose readings below 54 mg/dl.

**RESULTS**

The study was conducted between Nov 2017 and July 2019, at 4 sites in the US (Florida, Boston, New Haven and Denver) and 3 sites in Germany, Slovenia and Israel. Generally, participants, families and health care providers were glad to participate in a study that allowed for sharing of glucose and insulin data frequently and remotely. In addition, healthcare team members were easily able to review the data and share dosing recommendations seamlessly.

**CONCLUSIONS**

The Advisor Pro can be used to optimize insulin pump setting during clinical visits, in-between visits or as part of virtual (telemedicine) visit. The ease of use of the remote system can facilitate intensive diabetes care management that can offer frequent insulin adjustments aim to improve glycemic control.

This study was funded by The Leona M. & Harry B. Helmsley Charitable Trust (Grant Number 2016PG-T1D050)
Children with T1D in school - the impact of technology  
Speaker: Nataša Bratina (Slovenia) 

Data from latest epidemiological research are showing how steadily the number of newly diagnosed children with type 1 diabetes is increasing with 3-4% on yearly basis all over the world. Next to this important fact, we have also reports that show an important decrease of age at diagnose.

So, the number of children with T1D that need support in kindergarten or school is increasing.

But what does it mean „to have diabetes - to be sick“ for a small baby, a child, for a teenager? Diabetes can enter in life of babies, children and adolescents in different moments. Children can also, as their parents feel fear, worries and uncertainty which are caused by symptoms and the diagnose of diabetes.

Next to it children can miss out school, they can feel lonely and misunderstood by their friends and schoolmates. Diabetes is a serious illness, and if coping strategies fail to function, children can develop signs of depression, anxiety.

So, how to deal with the disease, how to learn to live with one’s own illness and finally how to get support in school or kindergarten?

Abstract is not shown completely because the length is exceeded
Epigenetic markers of chronic complications in type 1 diabetes
Speaker: Klemen Dovc (Slovenia)
Type 1 diabetes is one of the most common chronic conditions of children and adults all over the world. Its incidence is increasing worldwide with an estimated overall annual rate of up to 3% particularly in the youngest age group. Its main feature is autoimmune destruction of insulin-secreting pancreatic β-cells leading to disturbed glucose regulation and overt hyperglycemia. Consequently, patients with T1D have a lifelong need for insulin replacement therapy. The primary goal in the treatment of T1D is to maintain blood glucose levels as close to normal as possible with the aim of preventing and/or delaying micro and macrovascular complications (e.g. retinopathy, chronic kidney disease, neuropathy, cardiovascular disease,...), which together represent the major cause of morbidity and mortality in developed societies.

Epigenetic patterns with DNA methylation play an important role in the regulation of human metabolism. All main epigenetic mechanisms are involved in the regulation of gene expression, contributing to the physiological or pathological response to the environmental factors. Thus, DNA methylation represents a sophisticated molecular mechanism for annotating genetic information. Furthermore, the environmental factors themselves can induce epigenetic modifications. DNA methylation alterations may influence the onset and development of type 1 diabetes through the regulation of the genes involved in autoimmune reactions, β-cell survival and function. Identification of the epigenetic biomarkers and related pathways is therefore important in the identification and subsequent prevention of the metabolic changes that could lead to disease progression and development of the chronic complications. Correlation of the metabolic profiles of individuals with type 1 diabetes and their glycemic control might enable identification of metabolites important in dynamics or the progress of disease complications and their relation to epigenetic alterations. Unlike genetic changes, epigenetic variations could be reversible and the understanding, how the interaction of genetic and non-genetic effects induces tissue-specific damage could enhance our ability to predict, and possibly even modify that process.

MAIT cells interactions and Type 1 Diabetes: a new pathway to understand the disease?
Speaker: Carol Passone (Brazil)
Mucosal Associated Invariant T (MAIT) cells are innate-like T cells that recognize bacterial metabolites derived from the synthesis of riboflavin and participate in innate and adaptive immune system. They could represent a key player linking microbiota and gut mucosa homeostasis to the autoimmune destruction of pancreatic islets.
Epidemiology and mortality of type 1 diabetes among Children and young adults 0-25 years in Rwanda: A registry based study
Speaker: Edison Rwagasore (Rwanda)

**Background:** Rwanda established a National Diabetes Registry with a type 1 pediatric subcomponent to improve data for surveillance and quality of care that has been created by the linkage of two mainly routinely collected data sources at health care facility level. We described the process and basic core data of the established diabetes registry in Rwanda.

**Methods:** The Quasi - experimental cohort study included 31 district hospitals in which the electronic medical records module was established that includes information such as patient demographic, patients' unique ID, clinical characteristics, risk factors, treatment and lab results and patient movement to and out of the clinic and track patients over time. Health care providers received a training on use of electronic medical records followed by data entry of all type 1 diabetes patients(<26 years of age) who were on follow up since 2011 to June 2019.

**Results:** Total of 470 type 1 diabetes cases(<26 years) from 31 district hospitals were identified and enrolled in the registry. Majority of registered type 1 patients were female 57%(272). Big proportion 38.7%(164) of type 1 patients are in social economic class two(middle income) with a slight difference to class three(higher income) 35.9%(152) and class one(lower income) 25.2% (107). Type 1 diabetes among children and young adults was predominant in Age group 16-25 with 86.6%(407) and majority were diagnosed at the age between 16-25 with 62.7%(255). There has been a steady increase of new cases over time where 13 new cases were recorded in 2011 to 72 cases in year 2018. More than two thirds 77% ( 95%CI: 71.8-81.7) had uncontrolled glycemic level(HB1AC>7%).

**Conclusion:** The use of a diabetes registry is a crucial step towards distributing epidemiological data of type1 diabetes. The registry has enabled the identification of group with high prevalence in developing strategies to reduce costs of care and help with the development of early detection and care programs for type 1 diabetes.
**Scientific Programme**

**Socio-demographic and clinical correlates of fear of hypoglycemia among parents of children with type 1 diabetes: results from an Italian survey**  
Abstract Presenter: Dorina Pjetraj (Italy)  
16:18 - 16:29

**Sleep habits of a well-controlled group of youths with type 1 diabetes mellitus**  
Abstract Presenter: Melina Karipidou (Greece)  
16:29 - 16:40

**The link between externalizing behavior and HbA1c in youth with type 1 diabetes is mediated by executive function: novel insights for interventions**  
Abstract Presenter: Maartje de Wit (Netherlands)  
16:40 - 16:51

**Changing the conversation: addressing emotional wellbeing and mental health in adolescents living with type 1 diabetes**  
Abstract Presenter: Judith Versloot (Canada)  
16:51 - 17:02

**Diabetes related knowledge and attitude towards diabetes among final-year medical students from different worldwide centers - preliminary results**  
Abstract Presenter: Agata Chobot (Poland)  
17:02 - 17:13

**Oral Session VII, Nutrition and the Gut**

**Chairs:**  
Chair: Bruce King (Australia)  
Chair: Francesca Annan (United Kingdom)

**Effect of prebiotic intake on glycemic control and intestinal permeability in children with type 1 diabetes**  
Abstract Presenter: Carol Huang (Canada)  
15:45 - 15:56

**Effect of high-dose oral probiotic intake on glycaemic control in children with type 1 diabetes mellitus: a randomised, double-blind placebo control trial**  
Abstract Presenter: Rakesh Kumar (India)  
15:56 - 16:07

**Impact of diet on the gut microbiome and short chain fatty acids in children with and without type 1 diabetes**  
Abstract Presenter: Jessica Harbison (Australia)  
16:07 - 16:18

**A standardized approach for management of pediatric patients with type 1 diabetes following low carbohydrate or ketogenic diets**  
Abstract Presenter: Amy Rydin (United States)  
16:18 - 16:29

**Youth with more severe type 1 diabetes are slower to process healthiness of food**  
Abstract Presenter: Amy Seagroves (United States)  
16:29 - 16:40

**Household food insecurity in high-risk youth with type 1 diabetes: associations with glycemic control, diabetes distress and general stress**  
Abstract Presenter: Faisal Malik (United States)  
16:40 - 16:51
Scientific Programme

**Prevalence and sociodemographic correlates of household food insecurity in youth and young adults with diabetes: the SEARCH for diabetes in youth study**
Abstract Presenter: Faisal Malik (United States)

**Differences in celiac disease screening rates between children, adolescents and adult type 1 diabetes patients evaluated as part of the CD-DIET study**
Abstract Presenter: Farid Mahmud (Canada)

Meetings
17:30 - 19:00
Constitution Ballroom

**ISPAD Annual General Meeting**
Saturday, 02 November 2019

Plenary Session
08:00 - 09:30
Grand Ballroom

**Plenary Session IV, Prediction, Prevention & Interdiction of T1D**

**Chairs:**
Chair: Diane Wherett (Canada)
Chair: Steven Willi (United States)

**EXTEND Primary Study Results: Safety & Efficacy**
Speaker: Carla Greenbaum (United States) 08:00 - 08:45

**Triggers and Promoters of Beta Cell Autoimmunity - Update from TEDDY**
Speaker: Marian Rewers (United States) 08:45 - 09:30
Barbara Davis Center for Diabetes, University of Colorado School of Medicine, Aurora, USA.

The goal of The Environmental Determinants of Diabetes in the Young (TEDDY) consortium is to find the cause(s) of T1D and modifiable pathways that could be exploited to prevent it. TEDDY has HLA screened 424,782 newborns in Finland, Germany, Sweden and the US and followed, for up to 15 years, 8,676 those at the highest genetic risk for T1D. As of August 2019, 817 children have developed persistent islet autoantibodies and 351 have progressed to clinical diabetes. TEDDY is evaluating multiple dietary, infectious and other environmental factors that may trigger islet autoimmunity or determine the rate of progression to diabetes. Participants are examined every 3 months until 4 y of age and every 6 months thereafter. Genetic factors and questionnaire-derived environmental exposures are analyzed in the whole TEDDY cohort. Genomic, proteomic, metabolomics, metagenomic and dietary biomarkers are being analyzed in a nested case-control study including multiple serial blood and stool samples from the initial 419 cases and matched controls. This comprehensive characterization of children developing islet autoimmunity and T1D and matched controls is a one of the largest systems biology projects currently underway, to integrate environmental exposure data with genetic and longitudinally defined phenotype information. TEDDY results to date point to specific environmental triggers of beta-cell autoimmunity and provide clues to possible primary prevention.

Symposium
09:45 - 11:15
Grand Ballroom

**Nutrition Symposium: Controversies and Considerations**

**Chairs:**
Chair: Heather Gilbertson (Australia)
Chair: Mehta Sanjeev

**Very Low Carb Diets in T1D**
Speaker: Belinda Lennerz (United States) 09:45 - 10:15
Scientific Programme

Challenges of Low Carb Diets in T1D
Speaker: Carmel Smart (Australia)

Nutritional management of type 1 diabetes (T1D) in childhood requires an individualized approach that is family centred, culturally appropriate and takes into account differing perspectives about foods. The quality, distribution and total amount of carbohydrate, and how to match prandial insulin to this to minimise postprandial glycemic variability is a key component of nutrition education. Building a trusting relationship with parents and the child is critical to understand motivations and enable communication about food choices.

A variety of healthful food choices is important for all children and adolescents to meet their energy requirements for growth and physical activity, and their nutritional needs at every age. High quality carbohydrate-containing foods including grains, legumes and fruit are important sources of nutrients and dietary fibre. Hence, low carbohydrate diets may require additional attention to vitamin, fibre and energy intakes depending on the extent of carbohydrate restriction. Clinical considerations on a low carbohydrate diet may include an increased risk of dyslipidemia and/or hypoglycemia. As adolescents with T1D are an at-risk group for disordered eating, decreasing the number of unnecessary food restrictions and enabling confidence with food consumption at social events may be important preventative strategies.

Approaches to food and insulin management routines that achieve target glycemia across all eating patterns will be presented. Continuous glucose monitoring has revealed food absorption patterns and new studies guide insulin dose adjustments and split for meals of mixed macronutrient content. It is now possible to individualize meal-time insulin delivery to match varying blood glucose profiles following a wide range of foods of varying macronutrient compositions.

CGM Trend Arrow Dosing and Bolusing for Carbs with Automated Insulin Delivery
Speaker: Laurie Higgins (United States)

Symposium
09:45 - 11:15
Constitution Ballroom

Diabetes Historical Perspectives: Yesterday, Today & Tomorrow

Chairs:
Chair: Stuart Brink (United States)
Chair: Christos S. Bartsocas (Greece)

T1D Then & Now: Reflections on more than Half a Century of Life and Science
Speaker: Michael Brownlee

09:45 - 10:15

T1D Now & Later: Doing it Together (DIT) through Care, Research, Technology and Advocacy
Speaker: Rayhan Lal (United States)

10:15 - 10:45
Scientific Programme

**10:45 - 11:15**

**T1D: Putting it All Together & Keeping it Together**

Speaker: Karin Lange (Germany)

A good and long life with diabetes: the psychological impact of diabetes team members

Regardless of the decade of diagnosis, type 1 diabetes in a young person represents a deep cut in the life of the whole family. Many changes in everyday life are just as necessary today as they were 50 years ago. The thoughts of all family members revolve around the chances of the affected child leading a normal life and the hope of a cure.

Over the past decades, diabetes education and counselling concepts for children, adolescents and parents became indispensable prerequisites for successful self-management therapies 24 hours/365 days a year. However, knowledge and skills alone are not enough. Equally important are an optimistic view of the future, self-confidence and lifelong acceptance of a ‘somewhat’ different life. Parents need support so that their children can grow up as normally as possible, i.e. experience diabetes as a ‘minor’ matter and not as the focus of family life. Every member of a pediatric diabetes team can contribute “psychologically” from onset on ensuring that a good life can succeed “with” rather than “for” diabetes. Empathy, genuineness, and acceptance in the sense of Carl Rogers represent bases of communication with families at diagnosis, at child’s first in-patient stay and during the lifelong out-patient diabetes care. The aim of long-term care is not only to recognize acute somatic problems and improve insulin dosing, but also to identify psychological distress or disorders at an early stage and treat them appropriately. For this purpose, a multi-professional team is desirable, which works closely together and accompanies families from the diagnosis and the first in-patient stay with adequate diabetes education to young adulthood. It will be a long time until this quality of care is available to all young people with diabetes worldwide. But already today every team member can positively influence the future perspective and quality of life of a young person with diabetes by his own philosophical attitude and handling of the chronic disease. About 2000 years ago the philosopher Epicetus formulated: “Perturbant homines non res ipsae, sed de rebus opiniones” (Men are disturbed, not by things, but by the principles and notions which they form concerning things).

**Oral Session**

**09:45 - 11:15**

**Republic Ballroom**

**Oral Session VIII, Diabetes Care-Health Outcomes**

**Chairs:**
Chair: Linda DiMeglio (United States)
Chair: Joseph Wolfsdorf (United States)

- **Most preschool children with T1D in Sweden reach ISPAD target HbA1c**
  Abstract Presenter: Frida Sundberg (Sweden) 09:45 - 09:56

- **Identifying HbA1c trajectories in 5-9-year-olds across the recent-onset period of type 1 diabetes (T1D)**
  Abstract Presenter: Susana Patton (United States) 09:56 - 10:07

- **Glycemic control of adolescents and young adults with type 1 diabetes across Australia and New Zealand**
  Abstract Presenter: Maria Craig (Australia) 10:07 - 10:18
Scientific Programme

**Lowering HbA1c during the first 2 years predicts a lower long-term HbA1c on a clinic level**
Abstract Presenter: Ragnar Hanas (Sweden)

**Analysis of continuous glucose monitoring data reveals vacation-associated deterioration of glycemic control in pediatric type 1 diabetes**
Abstract Presenter: Christina M. Astley (United States)

**Occurrence of hypoglycemia with fast-acting insulin aspart versus insulin aspart according to baseline HbA1c in children and adolescents with type 1 diabetes: a post hoc analysis**
Abstract Presenter: Lori Laffel (United States)

**10-year follow-up of the SWEET type 1 diabetes registry: improvement of metabolic control in all age groups**
Abstract Presenter: Thomas Danne (Germany)

**Costs and outcomes of intermediate versus minimal care for youth-onset type 1 diabetes in six countries**
Abstract Presenter: Graham Ogle (Australia)

Plenary Session
11:45 - 13:15
Grand Ballroom

**Plenary Session V, JDRF Session: Closing the Loop**

**Advances in Human Factors Design for Closed Loop Devices**
Speaker: Eyal Dassau (United States)

**Closed Loop Studies across the Pediatric Age Range**
Speaker: Roman Hovorka (United Kingdom)
Artificial pancreas systems for managing type 1 diabetes have progressed from research into clinical practice, revealing important considerations for future advancements. To mimic the healthy pancreas, basal exogenous insulin administration replicates the background insulin produced by the pancreas and additional insulin boluses are required at mealtimes, when glucose concentrations rise in response to carbohydrate consumption. As the burden of diabetes self-management remains high, there is a growing need for devices that continuously monitor glucose concentrations and automatically adjust insulin delivery rates – the so-called ‘artificial pancreas’ – to help maintain blood glucose in a healthy range. The presentation shows advances in artificial pancreas systems and considerations for continued progress toward widespread clinical adoption particularly in young people.

**Do-It-Yourself Approaches: We can’t wait!**
Speaker: Brandon Arbiter (United States)
Scientific Programme

Opening & Closing Sessions
13:15 - 13:45
Grand Ballroom

Closing Ceremony

Chairs:
Chair: Kim Donaghue (Australia)
Chair: Lori Laffel (United States)
Chair: Joseph Wolfsdorf (United States)