# 59th EASD Annual Meeting

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Welcome Address

Dear Members and Guests,

As the current President of the European Association for the Study of Diabetes, I have the honour and pleasure to welcome you to the 59th EASD Annual Meeting.

The meeting will be another great opportunity to connect the global diabetes community, share ground-breaking diabetes science and research, and to provide educational opportunities.

You can look forward to an exceptional scientific programme that not only looks to the future, but also deals extensively with current treatments, technologies and care as well as outstanding scientific research. Across 8 parallel tracks, you are invited to attend stimulating symposia, thought-provoking debates, award lectures, a dedicated e-Learning track as well as numerous oral and short oral presentations.

You are invited to actively join the discussions during the short oral presentations, take advantage of the opportunity to debate many new research findings with colleagues coming from all over the world, promote interdisciplinary exchange and establish new research collaborations – we know that the quality of the meeting is to a large extend determined by you – the people who are with us.

Hamburg, host city of the 59th EASD Annual Meeting, is also known as Germany’s gateway to the world and it will offer ample opportunities to socialise and network with peers from all over the world. Needless to say, this city offers great options outside of the scientific programme hours. History, architecture, culture, gastronomy and entertainment provide a variety of choices on how to spend your evenings.

On behalf of the EASD Board and the entire EASD team, I invite you to join us in Hamburg and – to those who might not be able to travel – I invite you to join us virtually!

We look forward to welcoming all of you! Let’s get together and continue fighting diabetes!

Chantal Mathieu
President EASD/EFSD
Dear Colleagues and Friends,

On behalf of the 2023 Scientific Programme Committee, I have the pleasure of welcoming you to the 59th EASD Annual Meeting in Hamburg, Germany.

As this is my first year serving as the EASD Honorary Secretary I am exceptionally excited about the scientific programme we have composed for this years’ meeting and I hope that everyone will find interesting topics which help us advance the field of diabetes research and care.

The Scientific Programme Committee together with the Abstract Review Committee reviewed 1430 submitted abstracts and selected 1007 for presentation. The outstanding programme will comprise of stimulating symposia and debates, numerous oral and short oral presentations as well as award lectures, honouring the achievements of distinguished scientists and promising talents in diabetes research.

Regardless of whether you are a clinician, basic scientist, nurse, healthcare professional, or young academic, the scientific programme of the EASD Annual Meeting 2023 will deliver an abundance of new knowledge covering the latest innovations and developments in the treatment of type 1 and type 2 diabetes and their associated complications.

Obviously, attending the EASD Annual Meeting 2023 is more than just following the scientific programme – it is also the perfect place to interact and communicate with colleagues from all over the world and offers a unique opportunity for exchange, dialogue and debate.

We invite you to join us and look forward welcoming you in Hamburg from 2 – 6 October 2023.

Tina Vilsbøll
Honorary Secretary EASD
About EASD

The European Association for the Study of Diabetes (EASD) e.V. is a non-profit, medical scientific association with the aim to encourage and support research in the field of diabetes, the rapid diffusion of acquired knowledge and to facilitate its application.

EASD is one of the largest networks for diabetologists worldwide. Membership is open to health care professionals, scientists, nurses and students from all over the world who are interested in the field of diabetes.

The EASD Annual Meeting is one of the largest diabetes-related conferences in the world, the scientific programme includes more than 1,200 talks and presentations on the latest results in basic and clinical diabetes research.

EASD is also actively involved in postgraduate education with a portfolio ranging from e-Learning activities to basic hands-on training courses including workshops to focused meetings on specific topics of diabetes research and care to collaborations with national associations across the globe.

In 2000, EASD increased its commitment to stimulate diabetes research in Europe by creating the European Foundation for the Study of Diabetes (EFSD). Since its inception, the EFSD has committed over €120 million to diabetes research in Europe by various funding means.

EASD is the publisher of the journal Diabetologia, a major monthly international diabetes journal with a high and rising impact factor.

For more information, please visit: www.easd.org.
About EFSD

The European Foundation for the Study of Diabetes (EFSD) was created by the European Association for the Study of Diabetes (EASD) in order to support more actively diabetes research in Europe and to serve the goals of EASD.

The EFSD began its work in 2000 and has become a significant European funding agency for diabetes research, and is continually striving to enhance diabetes awareness in Europe.

Since inception, EFSD has committed over €120 million to European diabetes research by way of a wide range of grant and fellowship funding initiatives.

For more information, please visit: www.europeandiabetesfoundation.org.

EFSD is greatly indebted to the following companies and organisations for their most generous support of European diabetes research:

**Boehringer Ingelheim:**

EFSD/Boehringer Ingelheim European Research Programme on “Multi-System Challenges in Diabetes”

This Programme is intended to stimulate and accelerate European research on the interrelation and crosstalk of different organs (e.g. heart, kidney, pancreas, gut, liver and brain) and related pathophysiology in diabetes and its complications and the impact of therapeutic interventions for this complex condition.

**Japan Diabetes Society:**

EFSD/JDS Reciprocal Travel Research Fellowships

The objective of these Fellowships is to encourage collaborative research between Europe and Japan in the field of diabetes.
Lilly:

EFSD/Lilly European Diabetes Research Programme
This Programme aims to promote increased European diabetes research and to raise public awareness and political understanding of the magnitude and burden of the disease. Grants are offered for any area of basic or clinical diabetes research.

EFSD/Lilly Young Investigator Research Award Programme
The objective of these Young Investigator Research Awards is to encourage innovative research in the field of diabetes and its complications, and to promote excellence in medical education.

EFSD/Lilly EXPLORING AND APPLYING NEW STRATEGIES IN DIABETES (EXPAND) Programme
This Programme aims to assess with dedicated research projects, potential strategies that could be implemented in Europe and rolled out in low-and middle income countries to favour the improvement of quality of care for all people living with diabetes.

Merck Sharp & Dohme:

EFSD European Research Programme on “New Targets for Diabetes or Obesity-related Metabolic Diseases” supported by MSD
This Programme is intended to stimulate and accelerate European research focusing on the identification and molecular understanding of new targets for the treatment of type 2 diabetes or obesity-related metabolic diseases.

Novo Nordisk A/S:

EFSD/Novo Nordisk Programme for Diabetes Research in Europe
This Programme aims to promote high-quality diabetes research in Europe, and accepts applications from all fields of clinical and basic diabetes research.

EASD Rising Star Symposium & EFSD Research Fellowship Programme supported by Novo Nordisk
This combined EASD/EFSD initiative aims to identify promising and innovative young researchers in basic and clinical diabetes research.
Novo Nordisk Foundation:

EFSD/Novo Nordisk Foundation Future Leaders Award Programme
This Programme is intended to identify outstanding clinical and basic scientists in European diabetes research in the transition from post-doctoral/clinical fellow to a tenured academic appointment in diabetes research in Europe and support them through significant career development awards over 5 years and fostering their development into the leaders of tomorrow.

EFSD/Novo Nordisk Foundation Precision Diabetes Medicine Award Programme
This Programme is based on scientific quality, innovation potential and a clear translational focus; bringing basic knowledge to use at the patient level in terms of e.g. disease prognosis, treatment prediction or patient stratification.

Sanofi:

EFSD/Sanofi “Outlook to the next 100 years of insulin: Innovative insulin delivery and monitoring systems”
The Programme is intended to stimulate and accelerate European research aimed at understanding and improving insulin delivery and action.

EFSD/Sanofi European Diabetes Research Programme in diabetes associated with cardiovascular disease
This Programme is intended to stimulate and accelerate European research aimed at improving understanding of cardiovascular disease associated with diabetes.

In addition, the EFSD Albert Renold Travel Fellowships enables young scientists to stay at other institutions in order to learn new techniques in basic or clinical diabetes research.

EFSD awards are strictly competitive and decisions are based upon a rigorous and fully independent peer-review process.

Further information on EFSD programmes can be found under: www.europeandiabetesfoundation.org
**General Information**

**Format**

The 59th EASD Annual Meeting will take place as a hybrid event from 2 to 6 October 2023, providing the option to join us in person in Hamburg, Germany or online via the Virtual Meeting platform.

All sessions in the scientific programme will take place onsite at the meeting venue in Hamburg at the times indicated in the programme and will be live-streamed for delegates attending the meeting virtually.

Recordings of all sessions will be available, access to recordings will be limited to registered delegates until 3 November 2023.

**Meeting venue**

The in person meeting will take place at:

**Hamburg Exhibition and Congress**

Messeplatz 1
20357 Hamburg, Germany
www.hamburg-messe.de/en/

For online attendance, the Virtual Meeting platform can be accessed directly or via the EASD website www.easd.org.

**Registration**

Children under the age of 18 are not permitted to access the 59th EASD Annual Meeting.

**Types of registration for the Annual Meeting:**

**In person attendance** to join onsite at the meeting venue in Hamburg, Germany. In person registration includes:

- Name Badge / Congress Material
- Access to the Scientific Programme
- Access to the Exhibition
- Public transportation ticket valid 2 - 6 October 2023
- Access to the Virtual Meeting platform (incl. live and on demand sessions, Industry content)
- Certification based on the delegates in person and / or virtual attendance

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**Advisory Note**

Please be aware of “fraudulent” third party companies offering EASD services e.g. registration or hotel accommodation.

EASD is the official registration provider and all EASD activities are handled via the official EASD website: www.easd.org.

Interplan is the official accommodation provider handling all hotel requests. Booking platform: easd23.interplan.de/Booking.html
Virtual attendance to follow the Annual Meeting online. Virtual registration includes:

- Access to the Virtual Meeting platform (incl. live and on demand sessions, Industry content)
- Certification based on the delegates watch time

All registrations prior to the EASD Annual Meeting dates have to be made by means of the secured online registration system. For more information, please visit: www.easd.org/annual-meeting/easd-2023.html.

During the EASD Annual Meeting dates, in person registrations can be made by the online registration system or at the onsite registration counter at the venue in Hamburg, Germany.

Virtual registrations can only be made by the online registration system.

**Certificates**

Certificates will be available for download via your MyEASD account. It will be mandatory to complete the congress evaluation survey to receive certification.

**EACCME® Certificate:**

The 59th EASD Annual Meeting is currently under review by the European Accreditation Council for Continuing Medical Education (EACCME®) to provide Continuing Medical Education (CME) credits.

**German CME / Fortbildungspunkte:**

The 59th EASD Annual Meeting is currently under review by the Ärztekammer Hamburg.

**Information for in person attendance onsite in Hamburg**

Registration counters are open:

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<thead>
<tr>
<th>Day</th>
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<tbody>
<tr>
<td>Sunday</td>
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<td>Friday</td>
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Badges:
The delegates’ name badges serve as an admission pass to all scientific sessions and the exhibition. Delegates are asked to keep their name badges displayed at all times during the meeting. Badges can be replaced and will be charged for.

First Aid:
The First Aid is located in Hall A2. In case of emergency, please contact the nearest security or staff member.

Restaurants:
There are various restaurants all over the venue.

Cloakroom/Lost and Found Counter:
A cloakroom with facilities for luggage storage and lost and found is located in the Entrance Hall, next to the registration.

Suitcases (except cabin trolleys) are not allowed in the halls.

Silence Room:
The Silence Room (A3.4) is located in hall A3 on the first floor.

EASD Community Plaza:
The EASD Community Plaza is located in Hall A1 and includes the EASD Member Lounge, the EASD/EFSD Booth, the Diabetologia and EASD Early Career Academy Booth, Virtual Meeting Tower, EASD TV Studio, seating areas and charging stations for mobile devices.
Opening hours EASD Booth and Member Lounge:

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<td>Tuesday</td>
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Exhibition - Opening Hours:

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<td>Wednesday</td>
<td>4 October 2023</td>
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<td>Friday</td>
<td>6 October 2023</td>
<td>09:00 - 15:00</td>
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Hotels:

INTERPLAN Congress, Meeting & Event Management AG

Phone: +49 89 548 2340
Email: hotels.easd@interplan.de
Booking platform: easd23.interplan.de/Booking.html

Security:

Any suspicious or unidentified items onsite at the meeting venue are to be reported immediately to the nearest staff member. Security staff are on duty to ensure that all persons entering the venue are wearing a badge. For your safety, it is strongly advised to leave all your valuables in a safe at your hotel.

Insurance:

The registration fees do not include the insurance of participants against accidents, sickness, cancellation, theft, property loss or damage. Participants are advised to take out adequate insurance especially with regards to travel.

Travel

Special Lufthansa Group airlines fares:

The Lufthansa Group airlines (Austrian Airlines, Lufthansa, SWISS, Brussels Airlines and Eurowings) offer reduced fares via their booking platform and with event code DEAUWRE for travelling to the EASD 2023 destination Hamburg, Germany. The reduced fares are automatically displayed.

Please enable pop-ups permanently in your browser while booking, otherwise the window in the booking platform will not open.
Special Deutsche Bahn train fares:

The Deutsche Bahn offers reduced fares for travelling by train to the EASD 2023 destination Hamburg, Germany via its booking platform.

Bookings on the platform are only available for travel between Saturday, 30 September and Sunday, 8 October 2023.

Transportation

Free public transportation during the Meeting within Hamburg. The “hvv Fahrkarte” logo which is printed on your name badge is your public transportation ticket, which is valid for 5 days, starting from Monday 2 October through to and including Friday 6 October 2023.

The venue Hamburg Messe can easily be reached by four different train and metro stations within walking distance.

Information for online attendance via the Virtual Meeting platform

Registered delegates can access the Virtual Meeting platform by using the email address / MyEASD account connected to the registration (respective email is provided on the registration confirmation).

The Virtual Meeting platform can be accessed directly or via the EASD website www.easd.org.

Technical requirements:

Delegates must ensure at their own expense that they meet the technical requirements necessary for following the EASD Annual Meeting virtually.
In addition to the necessary hardware, the following requirements will be needed:

- A stable internet connection with a minimum of 5 MBITs (data speed) to follow the online programme,
- A browser in an up-to-date version e.g. Chrome®, Firefox® or Safari®.

EASD recommends the participation via PC/Mac Computers and a resolution of Full HD 1920x1080 pixels or higher. Cookie and Pop-Up blocking measures may lead to problems. On smart phone/tablet devices only basic viewing features are being supported. It is recommended to use the Safari® browser for Apple® devices.

**Please note:** When using the Safari® browser on Apple® devices, you will need to enable pop-ups. Pop-ups are disabled by default in the Safari® browser. Please go to the settings of your Safari® browser and enable pop-ups.

For further instructions how to enable pop-ups, please see here.

EASD is not responsible if delegates are unable to successfully access the virtual meeting platform if they do not fulfil the technical requirements.

**Speakers and Chairpersons**

All speakers and chairpersons are expected to attend the EASD Annual Meeting in Hamburg, Germany, in person to participate live at the time indicated in the programme.

**Speakers’ Lounge:**

The Speakers’ Lounge is located in hall B1 on the 1st floor. All speakers are asked to check their presentations at the Speakers’ Lounge at least three hours before the scheduled presentation time. If the presentation is scheduled in the morning, speakers are kindly asked to check their presentation at the Speakers’ Lounge the day before.

**Short Oral Discussions Events:**

Short Oral Discussions rank equally with Oral Presentations. All Short Oral Discussions will take place during six events which will be held on Tuesday, Wednesday and Thursday.

<table>
<thead>
<tr>
<th>Event Name</th>
<th>Day</th>
<th>Time</th>
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<tbody>
<tr>
<td>Short Oral Discussions Event A</td>
<td>Tuesday</td>
<td>12:30 - 13:30</td>
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<tr>
<td>Short Oral Discussions Event B</td>
<td>Tuesday</td>
<td>13:45 - 14:45</td>
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<tr>
<td>Short Oral Discussions Event C</td>
<td>Wednesday</td>
<td>12:45 - 13:45</td>
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<td>Short Oral Discussions Event D</td>
<td>Wednesday</td>
<td>14:00 - 15:00</td>
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<td>Short Oral Discussions Event E</td>
<td>Thursday</td>
<td>12:45 - 13:45</td>
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<tr>
<td>Short Oral Discussions Event F</td>
<td>Thursday</td>
<td>14:00 - 15:00</td>
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Disclaimer

All efforts will be made to adhere to the programme as provided. However, EASD and its agents reserve the right to alter or cancel, without prior notice, any of the arrangements, timetables, plans or other items relating directly or indirectly to the Meeting, for any case beyond their reasonable control. EASD and the local conference organisers are not liable for any other loss or inconvenience caused as a result of such changes.

**EASD Early Career Academy**

The EASD Early Career Academy will host several activities during the EASD Annual Meeting in Hamburg.

**Showcasing EASD’s future: an EASD Early Career Academy Symposium**
Tuesday, 3 Oct 2023, 17:15 - 18:15 CEST, London Hall

**EASD Early-Career Academy Social Event**
Tuesday, 3 Oct 2023, 18:30 - 18:30 CEST, EASD Member Lounge

The social networking event is open to all early career researchers and clinicians interested in developing their career. The programme includes networking opportunities with drinks and discussion about the EASD Early Career Academy activities. Details on how to register for the event will be announced soon.

**Career development in diabetes research: an EASD Early Career Academy panel discussion**
Thursday, 5 Oct, 12:45 - 13:45 CEST, Spotlight Stage

The EASD Early Career Academy will also have a booth at the EASD Networking Plaza in Hall A1. We invite you to visit us there and learn more about us and our activities.
Be part of our global diabetes expert community!

JOIN EASD
European Association for the Study of Diabetes
**Programme Committee**

Chaired by Tina Vilsbøll, Denmark, Honorary Secretary, EASD

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<thead>
<tr>
<th>Tuesday</th>
<th>Wednesday</th>
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<tbody>
<tr>
<td>Karim Bouzakri, France</td>
<td>Sofia Carlsson, Sweden</td>
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<td>Martin Clodi, Austria</td>
<td>Leszek Czupryniak, Poland</td>
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<td>Dana Dabelea, USA</td>
<td>Lena Eliasson, Sweden</td>
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<tr>
<td>Martin Haluzik, Czech Republic</td>
<td>Christian Herder, Germany</td>
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<td>Joris Hoeks, Netherlands</td>
<td>Janaka Karalliedde, UK</td>
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<tr>
<td>Thomas Nyström, Sweden</td>
<td>John Petrie, UK</td>
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<tr>
<td>Maria Rohm, Germany</td>
<td>Niina Sandholm, Finland</td>
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<tr>
<td>Anna Solini, Italy</td>
<td>Allan A Vaag, Denmark</td>
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Programme Committee

Chaired by Tina Vilsbøll, Denmark, Honorary Secretary, EASD

Karim Bouzakri, France

Sofia Carlsson, Sweden

Martin Clodi, Austria

Leszek Czupryniak, Poland

Dana Dabelea, USA

Lena Eliasson, Sweden

Martin Haluzik, Czech Republic

Christian Herder, Germany

Joris Hoeks, Netherlands

Janaka Karalliedde, UK

Thomas Nyström, Sweden

John Petrie, UK

Maria Rohm, Germany

Niina Sandholm, Finland

Anna Solini, Italy

Allan A Vaag, Denmark
Abstracts

1430 abstracts were received by the Association and 1007 abstracts were accepted for inclusion. All abstracts were reviewed anonymously and scored by the Abstract Review Committee members.

The Programme Committee members designed the programme and created Oral and Short Oral Discussion sessions upon the accepted abstracts.

Publication of Abstracts

Accepted abstracts are published in the Abstract Volume by Diabetologia. Abstracts are also available online.

Embargo Policies

Information contained in abstracts may not be released until 1 July 2023 when the abstracts are published online. Oral Presentations are under embargo until the commencement of the speaker’s presentation. Short Oral Discussion Presentations are under embargo until 112:30 CEST on Tuesday, 3 October 2023.

Abstract Review Committee

In addition to the members of the Programme Committee, the Abstract Review Committee comprises the following members:

Andreas Andersen, Denmark
Luigi Laviola, Italy
Robert Ritzel, Germany

Bjørn Olav Åsvold, Norway
Bernhard Ludvik, Austria
Femke Rutters, Netherlands

Erika Bezerra Parente, Finland
Maciej Malecki, Poland
Lars Stechemesser, Austria

Amelie Bonnefond, France
Shivani Misra, UK
Karim Stenkula, Sweden

Malin Flodström Tullberg, Sweden
Mototsugu Nagao, Japan
Apostolos Tsapas, Greece

Samy Hadjadj, France
Peter Novodvorsky, UK, Slovakia
Sarah Wild, UK

Kurt Højlund, Denmark
Romano Regazzi, Switzerland
Anja Zeigerer, Germany

Niels Jessen, Denmark
Michael Resl, Austria
# Tuesday, 3 October 2023

<table>
<thead>
<tr>
<th>TIME</th>
<th>HAMBURG HALL</th>
<th>LONDON HALL</th>
<th>PARIS HALL</th>
<th>BARCELONA HALL</th>
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<tbody>
<tr>
<td>09:00 - 09:30</td>
<td>Presidential Address</td>
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<tr>
<td>09:30 - 10:15</td>
<td>55th Claude Bernard Lecture</td>
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<td>10:30 - 12:00</td>
<td>OP 1</td>
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<td>12:30 - 13:30</td>
<td>Short Oral Discussion Sessions Event A</td>
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<td>15:15 - 16:45</td>
<td>OP 8</td>
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<tr>
<td>17:15 - 18:15</td>
<td>38th Camillo Golgi Lecture</td>
<td>Showcasing EASD’s future: an EASD Early Career Academy Symposium</td>
<td>SGLT2 inhibitors and GLP-1 receptor agonist: mechanisms of beneficial action beyond glycaemic controls</td>
<td>Healing the feelings in type 1 diabetes</td>
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### Short Oral Discussion Sessions

<table>
<thead>
<tr>
<th>Event A</th>
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<tr>
<td>EASD e-Learning expert session</td>
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#### Monday, 3 October 2023

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<td>EASD e-Learning expert session</td>
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#### Debates
- **Debate: Initial combined therapy for type 2 diabetes: Should diabetes follow hypertension?**
- **The 1-hour plasma glucose as a novel biomarker for detecting dysglycaemia, complications and mortality**

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<tr>
<th>OP 12</th>
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#### Puzzles
- **Understanding and treating severe insulin resistance with lipodystrophy**
- **Stay tuned for optimal circadian rhythms and glucose control!**
- **Islet cross-talk in endocrine hormone regulation**

#### Time
- **17:15**
- **18:15**
## Wednesday, 4 October 2023

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<tr>
<td>09:00</td>
<td>Obesity heterogeneity: clinical aspects</td>
<td>17th Albert Renold Lecture (09:00 - 10:00)</td>
<td>The ongoing impact of the DCCT/EDIC Study at 40 Years</td>
<td>The evolving enigma of type 1 diabetes</td>
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<tr>
<td>17:30</td>
<td>EASD-Novo Nordisk Foundation Diabetes Prize for Excellence</td>
<td>Michael Berger Debate: Is it time to reclassify diabetes complications because microvascular and macrovascular classification is no longer sufficient?</td>
<td>Debate: Should non-insulin-treated women with diabetes during pregnancy be offered Continuous Glucose Monitoring?</td>
<td>Obesity and cachexia: Two sides of the same coin?</td>
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### Wednesday, 4 October 2023

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<tr>
<td>Cystic fibrosis derived diabetes from clinic to research and back</td>
<td>Hypo-RESOLVE</td>
<td>EASD/JDRF Symposium: Are youth with diabetes at risk for cardiovascular disease?</td>
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<td>OP 19</td>
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<td>EFSD Mentorship Programme 10:00 - 11:00, Sofia Hall</td>
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<td>EFSD/Novo Nordisk Foundation Future Leaders Symposium</td>
<td>Artificial Intelligence in diabetes care: potential and concerns</td>
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<td>Short Oral Discussion Sessions Event D</td>
<td>EASD e-Learning expert session</td>
<td>Beyond technology to physiologic solutions for type 1 diabetes: the case for islet cell replacement</td>
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<tr>
<td>Diabetic retinopathy biomarkers and treatment targets from discovery to the clinic</td>
<td>NAFLD and diabetes: chicken or egg?</td>
<td>Debate: Is lasting remission of type 2 diabetes feasible in the real world setting?</td>
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<td>09:00</td>
<td>Diabetologia Symposium: Incredible incretins - and where to find them</td>
<td>What have cohort studies taught us about the natural history of type 2 diabetes?</td>
<td>Rising Star Symposium (08:50 - 10:30)</td>
<td>Image-in’ what noninvasive techniques can do for diabetes research and care!</td>
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<td>58th Minkowski Lecture</td>
<td>‘With a little help from my friends’: What can we learn from other specialities?</td>
<td>SURMOUNT-4 Trial results: the impact of tirzepatide on maintenance of weight reduction and benefits of continued therapy</td>
<td>Adipose tissue heterogeneity: cellular and molecular aspect</td>
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### Thursday, 5 October 2023

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<tr>
<td>Metabolic</td>
<td>7th EASD-AASD</td>
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<td>Career development in diabetes research: an EASD Early Career Academy panel discussion</td>
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<td>Sweet Odyssey 2022: computing optimal care for complications</td>
<td>Diabetic Cardiomyopathy (DbCM): a severe complication of diabetes</td>
<td>Chronic Kidney Disease in type 1 diabetes</td>
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## Friday, 6 October 2023

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<tr>
<td>09:00-10:00</td>
<td>EASD-Lilly Centennial Anniversary Prize Lecture (09:00 - 09:45)</td>
<td>Current status on stem cell derived islets: Ready for the clinic?</td>
<td>Turning down the thermostat for metabolic health!</td>
<td>Debate: SGLT-2 or not 2 that is the question? All people with diabetes and CKD should be on SGLT-2 Inhibition by default</td>
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<td>10:30-11:30</td>
<td>OP 43</td>
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<td>13:30-15:00</td>
<td>Hyperglycaemic crises in adult patients with diabetes consensus report</td>
<td>EASD/ADA Symposium</td>
<td>Facing the unexpected: how to fight diabetes while fighting the war or disaster…</td>
<td>Diabetic neuropathy from genetics to clinical practice</td>
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**Friday, 6 October 2023**

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<tr>
<td>EASD/ESC Symposium: Does increased glucose variability harm the vessels or organs?</td>
<td>Sexual orientation, gender identity and cardiometabolic risk</td>
<td>Treatment strategies to prevent or attenuate renal impairment in type 2 diabetes</td>
<td>09:00 - 10:00</td>
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<td>OP 47</td>
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<td>European elections 2024: the role of EUDF and the diabetes community in raising diabetes on the policy agenda</td>
<td>10:30 - 11:30</td>
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<td>OP 54</td>
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<td>The SARS-CoV-2 virus is directly responsible for the increased incidence of type 1 diabetes during the early COVID-19 pandemic</td>
<td>12:00 - 13:00</td>
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<td>The old and the new risk factors for diabetic kidney disease</td>
<td>Brain control of islet function</td>
<td>Cognition and related conditions in diabetes</td>
<td>13:30 - 15:00</td>
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09:00 - 09:30  
**Hamburg Hall**

**Presidential Address**

*Speaker:* Chantal Mathieu, Belgium  
President EASD/EFSD

09:30 - 10:15  
**Hamburg Hall**

**55th Claude Bernard Lecture**

*Chair:* Chantal Mathieu, Belgium

*Speaker:* Åke Lernmark, Sweden

**Dissecting etiologies of autoimmune type 1 diabetes**

Åke Lernmark is Senior Professor in Experimental Diabetes Research at Lund University Clinical Research Centre in Malmö, Sweden. His major research interest is the genetic and environmental etiology of autoimmune type 1 diabetes. He is principal investigator for Sweden in The Environmental Determinants of Diabetes in the Young (TEDDY) study.

He was trained at the University of Umeå and obtained his Doctor of Medicine (PhD) degree in 1971 on studies of insulin release from isolated mouse pancreatic islets and developed a method for single islet cells. A nine-year docent ship from the Swedish Government made it possible to join Donald F. Steiner’s laboratory, first as Post Doc and then as an Assistant Professor at the University of Chicago. He later continued his research at the Hagedorn Research Laboratory in Gentofte, Denmark where he was the Director of Research (1979-1987). The first islet autoantigen was identified and molecular genetics studies allowed the discovery of HLA-DQ.

As Honorary Secretary of EASD he was responsible for the scientific programme at the Annual Meetings 1984-1988.

Åke Lernmark’s contributions have been honored with the Minkowski Award (1984), Kellion Medal (1985), David Rumbough Award (1985), Hamdan Award for Medical Science Excellence (2002), 18th Annual J. Allan Taylor International Prize (2002), Johnny Ludvigsson Prize (2009), Oscar Medin Prize (2019), George Eisenbarth Award (2020) and Kund Lundbæk Award (2021).

The research output is 657 peer-reviewed publications, 57 chapters in text books, and 26 peer-reviewed reviews. His H-index is 87, there are 33,309 citations and 907 publications in Web of Science. Åke Lernmark has mentored 33 graduate students and 29 postdoctoral fellows.
EASD Claude Bernard Medal and Lecture

The Claude Bernard Medal and Lectureship is the EASD’s highest award in recognition of contributions to the advancement of knowledge in the field of diabetes and related metabolic diseases.

The aim of the Lectureship is to honour an individual’s innovative leadership and lifetime achievements in diabetes research.

The Claude Bernard Prize is generously supported by Sanofi.

EASD Claude Bernard Lecturers

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10:30 - 12:00

Hamburg Hall

**OP 01  Tirzepatide: all things must SURPASS**

*Chair:* K. Toulis, Greece, A. Tsapas, Greece

1 **Tirzepatide achieves significant weight loss without adverse effects on muscle composition (SURPASS-3 MRI)**

J. Linge, I.J. Neeland, O. Dahlqvist Leinhard, N. Sattar, L. Fernández Landó, R. Bray, A. Rodriguez, Sweden, USA, UK

2 **Tirzepatide reduces muscle fat infiltration relative to insulin deglucer in people with type 2 diabetes (SURPASS-3 MRI)**

N. Sattar, J. Linge, I.J. Neeland, O. Dahlqvist Leinhard, L. Fernández Landó, R. Bray, Á. Rodríguez, UK, Sweden, USA

3 **Tirzepatide reduces albuminurina in patients with type 2 diabetes: post-hoc pooled analysis of SURPASS 1-5**


4 **Time spent with sustained HbA$_1c$ ≤6.5% (47.5 mmol/mol) and weight loss ≥5% after initiating tirzepatide vs semaglutide: an exploratory analysis of SURPASS-2**

B.K. Bergman, J. Rosenstock, T. Garvey, R.L. Batterham, Y. Chen, M. Liu, V.T. Thieu, USA, UK

5 **Tirzepatide compared to subcutaneous semaglutide for type 2 diabetes: a network meta-analysis**

T. Karagiannis, I. Avgerinos, K. Malandris, A. Stamati, A. Liakos, N. Kakaletsis, A. Tsapas, E. Bekiari, Greece, UK

6 **“Surpass(ing)” an era of basal-bolus insulin therapy: tirzepatide vs insulin lispro tid added-on to poorly controlled basal insulin-treated type 2 diabetes**

J.P. Frías, J. Rosenstock, H.W. Rodbard, S. Tofé, E. Sears, R. Huh, L. Fernández Landó, H. Patel, USA, Spain
10:30 - 12:00 London Hall

OP 02 Present, future and future future of insulin therapy

Chair: R. Buzzetti, Italy, M. Dabrowski, Poland

7 The effectiveness of closed-loop systems is maintained after one year of use
A. Romero Gregori, L. Albert Fàbregas, D. Subías Andújar, I. Capel Flores, A. Cano Palomares, I. Mazarico, M. Luchtenberg, M. Rigla, Spain

8 Better glycaemic control with once-weekly insulin icodex versus once daily insulin degludec in adults with insulin-naïve type 2 diabetes (ONWARDS 3)
I. Lingvay, M. Asong, C. Desouza, P. Gourdy, S. Kar, A. Vianna, T. Vilsbøll, S. Vinther, Y. Mu, USA, Denmark, France, India, Brazil, China

9 Efficacy and safety of once-weekly insulin icodex versus once-daily insulin degludec in type 1 diabetes: ONWARDS 6
D. Russell-Jones, T. Babazono, R. Cailletteau, S. Engberg, C. Irace, M.I. Kjaersgaard, C. Mathieu, J. Rosenstock, V. Woo, D.C. Klonoff, UK, Japan, Denmark, Italy, Belgium, USA, Canada

10 Once-weekly insulin efsitora alfa and daily degludec achieve comparable glycaemic control in 3 patient populations during phase 2: clinical insights from CGM assessments
C. Kazda, J. Bue-Valleskey, Q. Zhang, A. Haupt, J. Frias, D. Dahl, USA, Germany

11 Efficacy and safety of a functionally selective insulin: a 26-week randomised, double blind trial versus insulin glargine in people with type 2 diabetes

12 Ultra-rapid lispro is more protective against exercise-associated hypoglycaemia over lispro in adults with type 1 diabetes on continuous subcutaneous insulin infusion
J. Leohr, A. Abibol, E. Smith LaBell, A. Ghosh, L.V. Turner, D. Shakeri, T. Fukuda, M.C. Riddell, USA, Canada
10:30 - 12:00    Paris Hall

**OP 03  Pregnancy and diabetes: lessons from cohort studies**

*Chair:* D. Jensen, Denmark, Y. Winhofer-Stoeckl, Austria

13 Pregnancy and neonatal outcomes following bariatric surgery in Queensland, Australia: a data-linkage matched cohort study
J. Eccles-Smith, Australia

14 Altered postprandial glucose metabolism and enteropancreatic hormone response during pregnancy following Roux-en-Y gastric bypass: a prospective cohort study

15 Screening of gestational diabetes in early pregnancy by oral glucose tolerance test and biomarkers: a multi-centre cohort study

16 Implementation of a screening protocol for the detection of Maturity Onset Diabetes of the Young (MODY) in pregnancy: a retrospective preliminary analysis
R. Farrelly, I. Blinkhorn, M. Rathod, E. Scott, UK

17 Maternal overweight and obesity is associated with metabolic changes and foetal overgrowth in the absence of gestational diabetes
G. Kotzaeridi, C. Monod, T. Linder, G. Yerlikaya-Schatten, S. Wegener, B. Mosimann, W. Henrich, A. Tura, C.S. Göbl, Austria, Switzerland, Germany, Italy

18 Effect of an interdisciplinary lifestyle and psychosocial intervention on metabolic and mental health outcomes in women with gestational diabetes: the MySweetheart trial
10:30 - 12:00

**Barcelona Hall**

**OP 04   Diet and exposome**

*Chair:* A. Pantea-Stoian, Romania, S. Schlesinger, Germany

19 Exploring the use of metabolomics to evaluate compliance to a mediterranean diet intervention for cardiometabolic health


20 Diet in the management of type 2 diabetes: an umbrella review of the evidence of randomised controlled trials

E. Szczerba, J. Barbaresko, T. Schiemann, A. Stahl-Pehe, L. Schwingshackl, S. Schlesinger, Germany

21 The associations between metabolomic responses to a liquid mixed meal and incidence of type 2 diabetes: Are there novel biomarkers beyond glucose and triglyceride response?


22 A randomised controlled trial of intermittently-scanned continuous glucose monitoring as an adjunct to lifestyle modification in impaired glucose tolerance

E. Chow, N. Chu, J. He, H. Leung, C. So, E. Poon, R. Chan, A. Kong, J. Chan, Hong Kong

23 Enteroviral infections are not associated with type 2 diabetes

K. Maedler, H. Liu, S. Geravandi, A. Pugliese, Germany

24 Low dose radiation exposure and the risk of diabetes: a 10-year retrospective cohort study

H. Hu, T. Okubo, Japan
10:30 - 12:00    Mumbai Hall

**OP 05  Walking towards better treatments for diabetic feet and neuropathy**

*Chair:* N. Papanas, Greece, V. Lyssenko, Norway

**25 Efficacy of autologous cell therapy in the treatment of chronic limb-threatening ischaemia in people with diabetes: a randomised controlled trial**

M. Dubsky, J. Husakova, D. Sojakova, V. Fejfarova, R. Jarosikova, A. Nemcova, V. Lovasova, K. Sutoris, V. Woskova, Czech Republic

**26 Effect of macrophage-regulating new drug in treatment of diabetic foot ulcers: from phase 3 MRCT to real-world**

K. Lin, C. Chen, Y. Tarng, M. Kuo, J. Chen, Y. Wu, C. Li, S. Chang, Taiwan

**27 Demographics and baseline characteristics of patients with Charcot foot: a multi-centre cohort analysis**

N. Tentolouris, C. Siafarikas, M. Dubský, J. LaFontaine, K. Marie-France, T. Tankova, J. Pappachan, A. Rastogi, E. Jude, Greece, Czech Republic, USA, UK, Bulgaria, India

**28 Anti-RANKL antibody for active charcot neuroarthropathy of foot in chronic kidney disease: randomised, placebo controlled study**

A. Rastogi, R. Dangwal, S.K. Bhadada, India

**29 LX9211 in individuals with painful diabetic peripheral neuropathy: results from a randomised, double-blind, placebo-controlled, parallel-group, multicentre study**

R. Pop-Busui, A. Patel, C. Sang, C. Granowitz, P. Banks, P. Pierce, F. Sun, S. Gopinathan, USA

**30 The impact of obstructive sleep apnoea treatment on peripheral neuropathy in patients with type 2 diabetes: results from a 2-year feasibility rct**

10:30 - 12:00    Lima Hall

**OP 06  Adipocytes and adipose tissue plasticity**

*Chair:* L. Kazak, Canada, G. Sancar, Germany

31 Functional genomics approach for discovery of novel regulators of human adipose tissue plasticity  

32 Estrogen receptor in adipocyte precursor cells: implications for diabetes after breast cancer therapy  
E.A. Wellberg, R.L. Scalzo, N.S. Thomas, USA

33 Ehd2 regulates plasma membrane integrity and downstream insulin signalling events  

34 Gpr146 deficiency preserves a lean, metabolically healthy phenotype in mice during diet-induced obesity  

35 Arctic diet prevents postprandial hyperglycaemia in Tbc1d4-deficient mice  
A.K. Scheel, S. Pirseyedi, L. Espelage, H. Al-Hasani, A. Chad, Germany
10:30 - 12:00 Cairo Hall

OP 07  Regulation of islet function through gene editing and modification

Chair: A. Martinez-Sanchez, UK, R. Regazzi, Switzerland

37 Establishment of pancreatic beta cell-specific gene knockout system based on CRISPR-Cas9 technology with AAV8-mediated gRNA delivery
K. Ueki, Y. Nishida, H. Uzawa, A. Kanai, T. Miyatsuka, H. Watada, Japan

38 Depletion of 14-3-3ζ in pancreatic beta cells by antisense oligonucleotides promotes beta cell proliferation and increases beta cell mass
G.E. Lim, F. Paré, S. Djerroud, T.P. Prakash, E. Pirie, N. Wijesekara, Canada, USA

39 Direct beneficial effects of truncated C1QL1 on mouse and human islet function in vitro
M. Billert, P. Atanes, I. Ruz-Maldonado, M. Zhao, S. Persaud, UK

40 Suppression of microRNA-33 improves pancreatic beta cell function and mass in murine and human islets
R. Ortega, I. Ruz-Maldonado, P. Atanes, N. Price, M. Zhao, C. Fernandez-Hernando, S. Persaud, B. Liu, UK, USA

41 Human pancreatic islet miRNA-mRNA regulatory networks associated with insulin secretion and type 2 diabetes development
A. Karagiannopoulos, E. Cowan, M. Maziarz, J.L. Esguerra, L. Eliasson, Sweden, Denmark

42 Can long non-coding RNA derived micropeptides impact the pathogenesis of type 1 diabetes?
J. Mentxaka Salgado, K. García Etxeberria, L. Bergara, L. Mendoza Gómez, A. Castellanos Rubio, I. Santín, Spain
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SO 07 Mechanistic insights ................................................. 137  
SO 13 Monogenic diabetes ...................................................... 144  
SO 19 Transplantation of islet and stem cells today and tomorrow 150  
SO 25 Exercise as medicine ..................................................... 155  
SO 31 It's in the brain ............................................................. 161  
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SO 43 Small molecules to combat a large disease .......................... 174  
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SO 55 Nutrition: strawberry fields or glass onions? ...................... 187  
SO 61 Refining and redefining insulin therapy in type 1 diabetes ...... 194  
SO 67 Un/successful fitting diabetes in a health care system .......... 201  
SO 73 More or less likely but still important determinants of diabetes care 207  
SO 79 Diabetic complications: observational studies from nerves to blood vessels 214  
SO 85 Diabetes, lipids and the vessels ........................................ 219  
SO 91 Experimental models of diabetes: related complications .......... 224 |
12:30 - 13:30  Cairo Hall

EASD e-Learning expert session

Chair: TBA
Speaker: TBA

12:45 - 13:30  Spotlight Stage

Debate: Initial combined therapy for type 2 diabetes: Should diabetes follow hypertension?

Chair: Leszek Czupryniak Poland
Speaker: Peter Gaede, Denmark:
Yes! The more intensive therapy form the start, the better: all to scare the disease off

Harald Sourij, Austria:
No! Too much care may kill the cat (and costs too much)

followed by discussion
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<td>Cognitive impairment in diabetes</td>
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13:45 - 14:45 Cairo Hall

EASD e-Learning expert session

Chair: TBA
Speaker: TBA

14:45 - 14:30 Spotlight Stage

The 1-hour plasma glucose as a novel biomarker for detecting dysglycaemia, complications and mortality

Chair: Peter M Nilsson Sweden
Speaker: Michael Bergman, USA:
Background (rationale, pathophysiology) and overview

Jaakko Tuomilehto, Finland:
Detection of prediabetes and diagnosis of type 2 diabetes

Rafael Gabriel, Spain:
Cardiovascular outcomes and mortality
15:15 - 16:45

**OP 08 Towards curing obesity**

*Chair:* U. Riserus, Sweden

**43 Effects of gastric bypass on regional brain glucose uptake during normo- and hypoglycaemia**

**44 The metabolomic signature of weight loss interventions: insight from clinical trials**

**45 Remission of type 2 diabetes 5 years after gastric bypass versus sleeve gastrectomy: the Oseberg RCT**

**46 Synergistic effects of tirzepatide and pioglitazone on insulin sensitivity and beta cell function in diet-induced obese rats**
M. Abu-Farha, I. Al-Khairi, M. Qaddoumi, S. Al-Sabah, A. AlSabbagh, V. Lopez, T. Alessa, J. Kumar, N. Abukhalaf, P. Cherian, S. Al-Sabah, F. Al-Mulla, J. Abubaker, M. Abdul-Ghani, Kuwait, USA

**47 High-throughput proteomics of human adipose tissue reveals exercise and type 2 diabetes induced changes**

**48 GUBamy: a novel long-acting amylin analogue with significant therapeutic potential for mono- and combination therapy in obesity**
15:15 - 16:45    London Hall

OP 09  Treatment beyond metformin

Chair: G. Kostopoulos, Greece, T. Stulnig, Austria

49 The genetics of the response to second-line drug therapies for type 2 diabetes: genome-wide association studies in the GRADE clinical trial
L. Szczersbinski, J.H. Li, H. Liu, M. Tripputi, A. Kretowski, S.E. Kahn, J.M. Lachin, N. Younes, J.M. Mercader, J.C. Florez, the GRADE Research Group, Poland, USA

50 Effect of glucagon-like-peptide 1 analogues and sodium-glucose transport 2 inhibitors on MACE in an elderly population: a target trial emulation in Danish register data

51 Lower risk of severe hypoglycaemia with SGLT2 inhibitor compared to DPP4 inhibitor use in subjects with type 2 diabetes: a propensity score-matched cohort study
S. Moon, E. Kim, H.-S. Kwon, K. Han, Y.-B. Ahn, K.-H. Song, Republic of Korea

52 Benefit of dual therapy with GLP-1 RA and SGLT2i on renal outcomes in type 2 diabetes
K.K. Clemmensen, B. Zareini, T. Gerds, K.K. Sørensen, K. Kvist, J.-P. David, C. Torp-Pedersen, Denmark

53 Benefit of dual therapy with GLP-1 RA and SGLT2i on cardiovascular outcomes in type 2 diabetes
B. Zareini, T. Gerds, K.K. Sørensen, K.K. Clemmensen, K. Kvist, J.-P. David, C. Torp-Pedersen, Denmark

54 Precision medicine in type 2 diabetes: development and validation of a treatment selection algorithm for SGLT2-inhibitors and GLP1-receptor agonist therapies
OP 10  Activating two or three G´s; one of us is lonely

*Chair:*  R. Golubic, UK, M.A. Nauck, Germany

55 CT-388, a novel once-weekly dual GLP-1 and GIP receptor modulator, is safe, well-tolerated, and produces more than 8% weight loss in 4 weeks in overweight and obese adults
M.V. Chakravarthy, F.A. Arguelles-Tello, A.A. Sun, M. Elliott, L. Acosta, J.E. Rankin, S.K. Hansen, USA, Mexico, Australia

56 Retatrutide, a triple GIP/GLP-1/glucagon receptor agonist, provides robust HbA$_1c$ and body weight reductions to people with type 2 diabetes: a 36-week, phase 2 study

57 Once-weekly triple receptor (GIP/GLP-1/glucagon) agonist retatrutide (LY3437943): efficacy and safety in a 48-week obesity phase 2 trial

58 Efficacy of cotadutide dual GLP1-glucagon receptor agonist on albuminuria and glycaemic control in patients with diabetic kidney disease
D. Robertson, V. Selverajah, L. Hansen, L. Jermutus, K. Smith, C. Frickleton, A. Coggi, J. Sanchez, Y.-T. Chang, V.E. Parker, UK, USA, Sweden

59 A Phase II, randomised, double-blind, placebo-controlled, dose-finding study of BI 456906 in people living with overweight/obesity
C.W. Le Roux, O. Steen, K.J. Lucas, L. Borowska, A. Unseld, E. Startseva, Ireland, Canada, USA, Germany

60 Phase 2, randomised, placebo-controlled trial of pemvidutide, a GLP-1/glucagon dual receptor agonist, in subjects with overweight or obesity: a 24-week interim analysis
L. Aronne, M.S. Harris, M.S. Roberts, J. Suschak, S. Tomah, L. He, J. Yang, J.P. Frias, S.K. Browne, USA
**15:15 - 16:45**

**Barcelona Hall**

**OP 11**  Be(a)ware of hypoglycaemia unawareness

*Chair:* S.R. Heller, UK

**61** ZT-01, a somatostatin receptor 2 antagonist, increases glucagon response to hypoglycaemia in a phase 1b glycaemic clamp study in type 1 diabetes

A. Abitbol, R. Liggins, S. Peers, E. Simonson, M.C. Riddell, M. Midmer, Canada

**62** HIT4HYPOS CGM analysis: high intensity interval training reduces nocturnal hypoglycaemia in people with type 1 diabetes and impaired awareness of hypoglycaemia

C.M. Farrell, G. Cappon, D. West, A. Facchinetti, R.J. McCrimmon, UK, Italy

**63** Targeted metabolomics of impaired awareness of hypoglycaemia in individuals with type 1 diabetes


**64** ZT-01, a somatostatin receptor 2 antagonist (SSTR2a), increases pulsatile glucagon release during hypoglycaemia in type 1 diabetes

R. Liggins, A. Abitbol, M.C. Riddell, S. Peers, E. Simonson, M. Midmer, Canada

**65** Meta-genome-wide association studies identify potential SNPs and enriched pathways for impaired awareness of hypoglycaemia


**66** Reduced defensive responses to hypoglycaemia are associated with a loss of neuronal activation in the dorsomedial hypothalamus in mice

**OP 12  Diabetes and the brain**

*Chair:*  G. Daniele, Italy, J. Rungby, Denmark

**67** Associations of lower time in range with cognitive dysfunction and hippocampal damage in adults with type 2 diabetes  
Z. Zhang, C. Yu, Y. Bi, China

**68** Decreased cerebral glucose and increased cerebral fatty acid utilisation during fasting in type 2 diabetes  

**69** The role of microglial SCAP in diabetes-associated cognitive dysfunction  
W. Zhu, H. Zhang, T. Niu, K. Liu, S. Wang, China

**70** Intracerebrospinal fluid AAV-FGF21 gene therapy prevents high fat diet-associated cognitive decline in mice  
I. Grass, I. Elias, V. Sacristan, A. Ribera, C. Jambrina, E. Casaña, V. Jimenez, F. Bosch, Spain

**71** Remnant cholesterol is an independent risk factor for dementia in patients with type 2 diabetes: a nationwide population-based cohort study  
H. Jung, J. Huh, E. Rho, S. Lee, S.-H. Ihm, K.-D. Han, J. Kang, Republic of Korea

**72** An assessment of factors contributing to the decline in risk of stroke complicating type 2 diabetes over recent decades: the Fremantle Diabetes Study  
T.M. Davis, W.A. Davis, Australia
OP 13  Concerning insulin resistance

Chair:  B. De Galan, Netherlands, M. Heinzl, Austria

73 Insulin resistance is associated with unbalanced GIP and GLP-1 secretion
G. Di Giuseppe, G. Ciccarelli, L. Soldovieri, M. Brunetti, F. Cinti, S. Moffa, U. Capece, A. Mari, J.J. Holst, A. Giaccari, T. Mezza, Italy, Denmark

74 The relative contribution of insulin secretion and insulin sensitivity in the progression to type 2 diabetes in Asians

75 Dep-1 is a novel brain insulin receptor phosphatase and transcriptome regulator
S. Chopra, J. Ulke, L. Schmidt, O.L. Kadiri, M. Krüger, K. Kappert, A. Kleinridders, Germany

76 Renal cortical glucose uptake rate is decreased in insulin resistance and correlates inversely with serum free-fatty acids, ketone bodies and citrate levels
E. Rebelos, A. Mari, M.-J. Honka, L. Pekkarinen, S. Laurila, A. Latva-Rasku, J. Rajander, E. Saukko, H. Iida, P. Salminen, E. Ferrannini, P. Nuutila, Finland, Italy

77 The mechanisms of duodenal mucosal resurfacing procedure in reversing type 2 diabetes
N. LiJuan, C. Zhe, S. YaoHuan, Y. XinYi, Z. XiQiao, China

78 $^{13}$C glucose breath test analysis as an accurate index of insulin resistance in people with type 1 diabetes
J. Mertens, R. Braspenning, L. Roosens, S. Francque, C. De Block, Belgium
OP 14  Regulation of islet hormone secretion in type 1 diabetes and type 2 diabetes

Chair: L. Eliasson, Sweden, A. Tomas, UK

79 Loss of electrical beta to delta cell coupling underlies impaired hypoglycaemia-induced glucagon secretion in type 1 diabetes

80 Glucose inhibits glucagon secretion of mice with alpha cell specific deletion of KATP channels
M. Parambath, B. Lai, H. Chae, E. Gatineau, P. Gilon, Belgium

81 Recombinant PSP/reg treatment improves beta cell function in islets isolated from glucose intolerant and type 2 diabetic donors

82 Functional genomics highlights type 2 diabetes-associated purinergic receptor P2RY1 as a new modulator of insulin secretion in humans
A. Dance, M. Derhourhi, M. Boissel, M. Marre, G. Charpentier, A. Khamis, P. Froguel, A. Bonnefond, France, UK

83 A peptide-amino acid transporter axis regulates pancreatic beta cell maintenance and function
M. Nakazato, W. Zhang, H. Sakoda, Japan

84 Genome-wide screening for regulators of degradation of insulin secretory granules with a fluorescent reporter
A. Kanai, Y. Nishida, K. Ueki, H. Uzawa, H. Watada, Japan
38th Camillo Golgi Lecture

Chair: Chantal Mathieu, Belgium

Speaker: Stephan Herzig, Germany

Diabetes complications: from classical to emerging

Stephan Herzig is Research Director at Helmholtz Center Munich (HMGU), Scientific Director of the Helmholtz Diabetes Center, and Director of the Institute for Diabetes and Cancer. He holds a full professorship for molecular metabolic control at the medical faculty of the Technical University Munich and is honorary professor at the University of Heidelberg.

After obtaining his PhD from the University of Götingen in 1999, he moved to the U.S. for a postdoctoral training at the Salk Institute for Biological Studies in La Jolla, California. In 2003, he relocated to Germany to establish an independent junior group at the German Cancer Research Center, where he was promoted to department head in 2010. In 2012, he became full professor at the University of Heidelberg and eventually accepted an offer from the Helmholtz Center Munich in 2015.

The Herzig lab aims at identifying novel therapeutic targets for treating metabolic dysfunction in obesity and diabetes long-term complications.

To date, he has published more than 170 peer-reviewed papers including numerous publications in Nature, Nature Medicine, Science, and Cell Metabolism, and holds several patents. A number of prestigious awards have been granted to Stephan Herzig, exemplified by an Emmy-Noether Award (German Research Association, DFG), a Marie-Curie Excellence Award (European Commission) and most recently the Werner-Creutzfeldt Award (German Diabetes Association DDG).

Herzig is serving the scientific community by a number of coordinating functions in national and international consortia, and he is Editor-in-Chief of Molecular Metabolism.
**EASD Camillo Golgi Prize**

The EASD Camillo Golgi Prize is awarded for outstanding contributions in the field of the histopathology, pathogenesis, prevention and treatment of the complications of diabetes, which have been carried out in Europe by a member of EASD normally resident in Europe.

Publications in internationally recognized scientific journals over the last 5 years should demonstrate continuing activity, originality and excellence in the field.

The Camillo Golgi Prize is generously supported by Novo Nordisk.

**EASD Camillo Golgi Lecturers**

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17:15 - 18:15  London Hall

Showcasing EASD’s future: an EASD Early Career Academy Symposium

Chair: TBA
Speaker: Domenico Trico, Italy:
Beta cell overdrive: a quest for balance

17:15 - 18:15  Paris Hall

SGLT2 inhibitors and GLP-1 receptor agonist: mechanisms of beneficial action beyond glycaemic control

Chair: Tina Vilsbøll, Denmark
Speaker: André JL Scheen, Belgium:
The Heart
Katherine Tuttle, USA:
The Kidney
Norbert Stefan, Germany:
The Liver
Apostolos Tsapas, Greece:
Dual action time for combination?

17:15 - 18:15  Barcelona Hall

Healing the feelings in type 1 diabetes

Chair: Femke Rutters, Netherlands
Speaker: William H Polonsky, USA:
On detecting and measuring diabetes distress
Agnieszka Szadkowska, Poland:
Parental well-being and clinical outcomes: How much of an association?
Timothy W Jones, Australia:
Hybrid closed loop and QoL: How much of an impact?
17:15 - 18:15  Mumbai Hall

Understanding and treating severe insulin resistance with lipodystrophy

Chair: John Petrie, UK
Speaker: Rachel M Williams, UK:
Avoiding missed diagnoses: who to test
D Araújo-Vilar, Spain:
Lifestyle management
Joel K Elmquist, USA:
The role of leptin replacement

17:15 - 18:15  Lima Hall

Stay tuned for optimal circadian rhythms and glucose control!

Chair: Juleen R. Zierath, Sweden
Speaker: Charna Dibner, Switzerland:
When circadian rhythms go wrong in islet cells
Frank AJL Scheer, USA:
Circadian disruption and glucose tolerance
Christian Benedict, Sweden:
Disrupted sleep and type 2 diabetes risk

17:15 - 18:15  Cairo Hall

Islet cross-talk in endocrine hormone regulation

Chair: Patrik Rorsman, UK
Speaker: Bethany P Cummings, USA:
Alpha-cell paracrine signalling in the regulation of beta-cell insulin secretion
Zong Wei, USA:
Interorgan crosstalk in pancreatic islet function and pathology
09:00 - 10:30  

**Hamburg Hall**

**Obesity heterogeneity: clinical aspects**

*Chair:* Maria Rohm, Germany

*Speaker:* Roy Taylor, UK:

*Role and determinants of individual tolerability of obesity in diabetes development: lessons from the DiRECT study and beyond*

Matthias Blüher, Germany:

*Metabolic healthy obesity: fact or fiction?*

Mikael Rydén, Sweden:

*Intrinsic adipose tissue dysfunctions in obesity and its complications*
09:00 - 10:00  
London Hall

17th Albert Renold Lecture

Chair: Francesco Giorgino, Italy
Speaker: Yuval Dor, Israel

Disrupted RNA editing as a path to type 1 diabetes

Yuval Dor, PhD, is a Professor of biology at the Hebrew University-Hadassah Medical School. He earned his PhD in vascular biology at the Hebrew University in 2001 with Prof. Eli Keshet, and trained as a post-doc at Harvard University with Doug Melton until 2004.

His lab studies postnatal tissue dynamics: the molecular mechanisms by which cells regenerate and die. Much of his work focuses on pancreatic beta-cells in the context of type 1 and type 2 diabetes, as well as on pancreatic cancer. He is also using DNA methylation-based liquid biopsies to assess pathologies.

Since 2017 he is the chair of biology and medicine at the Israel Science Foundation

EASD Albert Renold Prize

Prize for an EASD member’s outstanding achievements in research on the islets of Langerhans.

The Albert Renold Prize honours the memory of Albert Renold, the distinguished diabetologist, researcher and also one of the founding members of EASD

The Albert Renold Prize is generously supported by Lilly.

EASD Albert Renold Lecturers

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09:00 - 10:30  
**Paris Hall**

The ongoing impact of the DCCT/EDIC Study at 40 Years

*Chair:* TBA  
*Speaker:* TBA

09:00 - 10:30  
**Barcelona Hall**

The evolving enigma of type 1 diabetes

*Chair:* Lars Christian Stene, Norway  
*Speaker:* Maria J Redondo, USA:  
**Heterogeneity of type 1 diabetes in children: implications for treatment, prognosis, and prevention**

R David Leslie, UK:  
**Autoimmune diabetes in adults-subtypes, treatment, prognosis, and prevention**

Emily K Sims, USA:  
**Universal screening: Is it around the corner?**

09:00 - 10:30  
**Mumbai Hall**

Cystic fibrosis derived diabetes from clinic to research and back

*Chair:* Lena Eliasson, Sweden  
*Speaker:* Andrea Kelly, USA:  
**Dysregulated insulin in pancreatic insufficient cystic fibrosis**

James AM Shaw, UK:  
**Exocrine-endocrine cross-talk in CFRD**

Charlotte Boughton, UK:  
**Insulin delivery for people living with diabetes: a clinical study**
09:00 - 10:30  Lima Hall

**Hypo-RESOLVE**

*Chair:* Bastiaan E de Galan, Netherlands:  
*Introduction to the project and hypoglycaemia in CVD*

*Speaker:* Pratik Choudhary, UK:  
*Clinical and psychological relevance of sensor-detected low glucose: the Hypo-METRICS study*

Jill Carlton, UK:  
*Health-economic impact of hypoglycaemia*

Simon R Heller, UK:  
*The classification of hypoglycaemia: then and now*

Brian Frier, UK:  
*Commentary*

09:00 - 10:30  Cairo Hall

**EASD/JDRF Symposium: Are youth with diabetes at risk for cardiovascular disease?**

*Chair:* Dana Dabelea, USA and Aaron J Kowalski, USA

*Speaker:* Amy K Mottl, USA:  
*Adverse vascular outcomes in youth-onset type 1 and type 2 diabetes: the SEARCH and TODAY experience*

Elaine M Urbina, USA:  
*Evidence of cardiac target organ damage in young adults with youth-onset diabetes*

Janet Snell-Bergeon, USA:  
*Novel biomarkers of CVD in people with youth-onset diabetes*
**10:00 - 11:00**  
**Sofia Hall**

**EFSD Mentorship programme**

*Chair:* Andrew JM Boulton, UK  
*Speaker:* Andrew JM Boulton, UK

**Welcome and Introduction of the Mentorship Programme**

**Presentation of the Mentees 2019 cohort:**

- Claudia Cavelti-Weder, Switzerland  
- Caterina Conte, Italy  
- Konstantinos Toulis, Greece

**Presentation of the Mentees 2020 cohort:**

- Thomas Ebert, Germany  
- Peter van Dijk, Netherlands  
- Andrew JM Boulton, UK

**Closing remarks**
10:45 - 12:15  
Hamburg Hall

**OP 15  Incretins and glucagon in action**

*Chair:* J. Brix, Austria, J. Jonker, Netherlands

**85 Signs of glucagon resistance after a two-week hypercaloric diet intervention**
M.P. Suppli, J.I. Bagger, G. Van Hall, M.B. Christensen, N. Wewer Albrechtsen, J.J. Holst, F.K. Knop, Denmark

**86 Estimation of insulin resistance and beta cell function by i.v. glucagon-insulin tolerance test in novel subgroups of adult-onset diabetes in Vaasa diabetes registry**
A. Laitinen, A. Käräjämäki, A. Käräjämäki, H. Liisa, S. Kurki, L. Kaj, E. Ahlqvist, T. Tuomi, Finland, Sweden

**87 Role of K\textsubscript{ATP} channels in regulating glucagon secretion under low and high glucose conditions**
E. Lee, R. Hatano, T. Noda, S. Acreman, Q. Zhang, T. Miki, Japan, UK

**88 Glucose-dependent insulinotropic polypeptide and glucagon-like peptide-1 do not account for the entire incretin effect in healthy humans**
S. Veedfald, Y. Sun, C. Xiang, C. Xie, T. Wu, M. Bound, J. Grivell, B. Hartmann, K. Jones, M. Horowitz, J.J. Holst, C.K. Rayner, Australia, Denmark

**89 Restoration of impaired portal glucose sensing by targeted manipulation of GLP-1r density in a translational model of insulin resistance**
C. Malbert, R. Allouche, M. Horowitz, K.L. Jones, France, Australia

**90 Body weight independent effects of CT-868, a signalling biased dual GLP-1/GIP receptor modulator, on glucose homeostasis in overweight and obese adults with type 2 diabetes**
M. Hompesch, M. Elliott, M. Hernandez, S. Hansen, A. Macias, M. Chakravarthy, USA
10:45 - 12:15  
London Hall

**OP 16  What new in type 1 diabetes treatment: focus on the islet cells**

*Chair:* S. Speier, Germany, M. Igoillo-Esteve, Belgium

91 Treatment of 355 early type 1 diabetes with a combination of multiple immune modulatory drugs  
Z. Talaeeerad, K. Khodabakhshi Pirkalani, Islamic Republic of Iran

92 Using a somatostatin receptor-2 antagonist to restore hypoglycaemia-induced glucagon secretion in type 1 diabetes  

93 Modulating the Hippo regulator YAP promotes beta cell regeneration in a model of type 1 diabetes  
M. Madduri, S. Baskaran, M. Elawour, S. Rafizadeh, A. Ardestani, K. Maedler, Germany

94 Higher levels of autoantibodies directed against IFN-alpha in latent autoimmune diabetes in adults compared to type 1 diabetes  
R. Amendolara, L. D’Onofrio, C. Castrucci, E. Maddaloni, S. Di Giulio, C. Mignogna, A. Siena, G. Giannini, R. Buzzetti, Italy

95 Beta cell autophagy in type 1 diabetes pathogenesis: real-time in vivo discoveries  

96 Heterogeneity of islet cell physiology in the pathogenesis of type 1 diabetes  
C.M. Cohrs, A.K. Mojica Avila, S. Speier, Germany
10:45 - 12:15  Paris Hall

OP 17  New approaches: a magical mystery tour

Chair:  A. Da Porto, Italy, P.M. Nilsson, Sweden

97 The effect of 14-day exogenous ketone supplementation on fasting metabolic outcomes in adults with type 2 diabetes: a randomised controlled trial
K. Falkenhain, H. Neudorf, K. Madden, J. Walsh, J. Little, Canada

98 ENT-03 rapidly decreases glucose prior to weight loss and activates brain regions involved in satiety and appetite regulation: comparison with semaglutide
D. Barbut, J. Hecksher-Sorensen, J. Baur, P. Titchenell, J. Davis, A. Fleming, M.B. Zemel, A. Moses, M.A. Zasloff, USA, Denmark

99 New pharmacological approaches to improve insulin secretion in type 2 diabetes

100 Pancreatic gene therapy durably improves glycaemia and delays disease progression in a murine model of type 2 diabetes
H. Rajagopalan, C. Lubaczewska, E. Cozzi, N. Picard, J. Wainer, R. Reese, J. Caplan, J. West, A.P. Liou, USA

101 Electroporation therapy (ReCET) of the duodenum combined with GLP-1RA to replace insulin in type 2 diabetes patients: 12 months results from the first-in-human study
C.B. Busch, S. Meiring, A.C. Van Baar, F. Holleman, M. Nieuwdorp, J.J. Bergman, Netherlands

102 Study of Multi-eLectrode EndovaScular denervaTiOn in patieNts with type 2 diabetes mEllitus (MILESTONE): 6-month analysis from the first-in-human proof-of-concept study
T. Pan, Z. Wang, G.-J. Teng, China
10:45 - 12:15    Barcelona Hall

**OP 18   Highlights in type 1 diabetes**

*Chair:* S. Carlsson, Sweden, C. Daniel, Germany

103 *Incidence trends of type 1 and type 2 diabetes in children and adolescents in Germany, 2002-2020*
A. Stahl-Pehe, C. Bächle, S. Lanzinger, C. Kamrath, R.W. Holl, J. Rosenbauer, Germany

104 *Secular trends in the occurrence of islet autoimmunity and type 1 diabetes by the age of 5 years in genetically susceptible children: a birth cohort analysis*

105 *Residual insulin after anti-viral treatment with pleconaril and ribavirin in new onset type 1 diabetes: a randomised, placebo-controlled, double blind, clinical trial*

106 *Time trends in the incidence of diabetic ketoacidosis among adults with type 1 diabetes: a nationwide Danish register study*
E. Buur Stougaard, H. Amadid, E. Søndergaard, B. Carstensen, M. Eika Jørgensen, K. Nørgaard, P. Rossing, F. Persson, D. Vistisen, Denmark, Greenland

107 *Enhanced immune response to cow’s milk is associated with the development of islet autoimmunity and type 1 diabetes: the TRIGR birth cohort study*

108 *Spatio-temporal association between COVID-19 incidence and type 1 diabetes incidence in children and adolescents in Germany*
J. Rosenbauer, A. Stahl-Pehe, C. Baechle, S. Lanzinger, C. Kamrath, O. Kuß, R.W. Holl, Germany
OP 19 Why does diabetes make one sad?
Chair: T. Andersen, Denmark, J. Gumprecht, Poland

109 Circulating metabolites as mediators in the association between depression and type 2 diabetes
N. Wang, Y. Yu, Y. Sun, Y. Wang, B. Wang, Y. Lu, China

110 The correlation between diabetes severity and depression
Y. Cho, K. Jo, E. Kim, J. Han, K. Han, S.-D. Moon, Republic of Korea

111 Risk of mental illness in new-onset type 1 diabetes in adulthood: nationwide cohort study
S. Kim, S. Cho, R. Oh, Y.-B. Lee, S.-M. Jin, G. Kim, J. Kim, Republic of Korea

112 Association between chronic complications of diabetes and diabetes distress: Can we prove it?
J. Konečná, D. Lacko, E. Horová, N. Křesáková, K.D. Riegel, Czech Republic

113 Mental health coping strategies and glycaemic management among people with diabetes in Europe
E. Cox, E. Lin, T. Bell, T. Bristow, R. Wood, USA

114 Acceptability and feasibility of CGM for people with severe mental illness: a mixed-methods study
J.V. Brown, P.A. Coventry, N. Siddiqi, R.A. Ajjan, UK
10:45 - 12:15

OP 20  NAFLD and omics

Chair: J.K. DiStefano, USA, A. Gastaldelli, Italy

115 Efficacy and safety of efinopegduotide in patients with nonalcoholic fatty liver disease and type 2 diabetes: results from an active-comparator-controlled study
S.S. Engel, R.R. Shankar, R.L. Lam, K.D. Kaufman, USA

116 Social jetlag induces fatty liver via perturbed serum prolactin rhythm mediated circadian reprogramming of hepatic lipid metabolism
P. Zhang, X. Ma, Y. Bi, China

117 Chronic treatment of mice with hepatocyte-released lipotoxic small extracellular vesicles causes liver and pancreas inflammation and alters insulin action
I. Garcia-Martinez, R. Alén, N. Cobo-Vuilleumier, B.R. Gauthier, A.M. Valverde, Spain

118 Targeting NAFLD with umbilical cord-derived mesenchymal stromal cells: a preclinical study

119 Change in Fibrosis-4 Index is associated with risk of liver events, cardiovascular events, and all-cause mortality in patients with obesity and/or type 2 diabetes

120 Oral insulin alleviates liver fibrosis and reduces fat in patients with NASH and type 2 diabetes: results of phase II clinical trial
M. Kidron, Y. Ishay, J. Neutel, Y. Kolben, R. Gelman, O. Sneh Arbib, O. Lopez, H. Katchman, R. Sotolongo, Y. Ilan, Israel, USA
OP 21  New strategies for diabetic retinopathy from mice to the clinic

Chair: J. Sokolovska, Latvia

121 Fasting prevents cholesterol crystal formation and the development of diabetic retinopathy
J. Busik, T.F. Dorweiler, Y. Adu Agyeiwaah, N. El-Darzi, N. Mast, G. Abela, I. Pikuleva, M.B. Grant, USA

122 NOD1 deficiency ameliorates the progression of diabetic retinopathy via modulating bone marrow-retina crosstalk
Y. Duan, J. Wu, W. Chen, D. Liu, China

123 Anti-ceramide immunotherapy: a systemic treatment for diabetic retinopathy
T.F. Dorweiler, A. Singh, G.J. Blanchard, R.N. Kolesnick, J.V. Busik, USA

124 Glucose tolerance and insulin resistance/sensitivity associate with retinal layer characteristics: the LIFE-Adult-Study

125 Risk factors for retinopathy in persons with type 1 diabetes followed from diagnosis and onward
S. Seyed Ahmadi, J. Ludvigsson, T. Nyström, M. Lind, Sweden

126 Incidence and risk factors for diabetic retinopathy at diagnosis of type 2 diabetes: an observational study of 77681 patients from the Swedish National Diabetes Registry
### Short Oral Discussions Event C

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<td>&quot;When I'm sixty-four&quot; (low and not-so-young)</td>
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<td>The Liver: from cell to clinic</td>
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12:45 - 13:45  
**Cairo Hall**

**EFSD/Novo Nordisk Foundation Future Leaders Symposium**

*Chair:* TBA  
*Speaker:* TBA

13:00 - 13:45  
**Spotlight Stage**

**Artificial Intelligence in diabetes care: potential and concerns**

*Chair:* Peter EH Schwarz Germany  
*Speaker:* Moshe Phillip, Israel:  
**AI for diabetes management and state-of-the-art today**

Tadej Battelino, Slovenia:  
**Implementing AI: roadmap and guidelines**
# Short Oral Discussions Event D

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14:00 - 15:00  Cairo Hall

EASD e-Learning expert session

Chair: TBA
Speaker: TBA

14:00 - 14:45  Spotlight Stage

Beyond technology to physiologic solutions for type 1 diabetes: the case for islet cell replacement

Chair: Lorenzo Piemonti, Italy
Speaker: Katarina Braune, Germany: Automated insulin delivery: delivering more of what people want

Peter A Senior, Canada: Safety, efficacy and desirability of islet cell transplants: the benchmark for stem cells

followed by discussion
OP 22  Improving the diagnosis and prediction of kidney disease progression

Chair:  L. Stechemesser, Austria

127 Receptor-interacting protein kinase (RIPK)3 regulates podocyte structure and function in diabetic kidney disease

128 Renal function based on serum cystatin C versus creatinine in determining mortality risk in type 2 diabetes: the Fremantle Diabetes Study Phase II
W.A. Davis, P. Chubb, D.G. Bruce, T.M. Davis, Australia

129 Preliminary results from iBEAt ancillary-study: a novel classification of renal damage in diabetes

130 External validation of kidney failure risk equation in a multi-ethnic cohort of more than 7000 people with type 2 diabetes and chronic kidney disease
A. Goubar, A. Mangelis, S. Thomas, P. Vas, J. Collins, S. Ayis, J. Karalliedde, UK

131 Utility of molecular markers in urine to differentiate diabetic kidney disease from non-diabetic kidney disease and possible role in pathogenesis
S. Ghosh, M. Basu, A. Raychaudhury, N. Bhattacharyya, P. Mukhopadhyay, India

132 Nox5: a promising therapeutic target for diabetic kidney disease
J.C. Jha, A. Dai, H.R. Kankanamalage, J. Meister, J. Vincent, M.E. Cooper, K. Jandeleit-Dahm, Australia, Germany, Switzerland
15:30 - 17:00  
**London Hall**

**OP 23  More news from SGLT2s**

*Chair:* I. Caruso, Italy, J.P.H. Wilding, UK

133 SGLT2 inhibitor dapagliflozin enhances skeletal muscle fatty acid uptake in subjects with type 2 diabetes: a positron emission tomography study  

134 Anti-inflammatory and antioxidant effects of SGLT-2 inhibitors in epicardial adipose tissue of subjects with severe heart failure  

135 Mapping the metabolic reprogramming induced by sodium-glucose cotransporter 2 inhibition  

136 Tolerability and effectiveness of gliclazide MR-SGLT2i combination in type 2 diabetes people fasting during Ramadan: a subgroup analysis of the real-world DIA-RAMADAN study  
M. Hassanein, A. Durocher, V. Cortese, United Arab Emirates, France

137 Risk of diabetic microvascular complications, heart failure, hospitalisation and all-cause mortality with SGLT2i and GLP1-ra in type 2 diabetes: a real-world data study  
A. Eleftheriadou, D. Riley, P. Austin, G. Hernandez, U. Alam, UK, USA

138 Socioeconomic disparities in the use of SGLT-2 inhibitors and GLP-1 receptor antagonists in adults with type 2 diabetes in Germany  
15:30 - 17:00
Paris Hall

OP 24  All around pregnancy

Chair: I. Danquah, Germany, D. Löffler, Germany

139 Prediabetes and diabetes 11 years after pregnancy in ethnic minority groups with and without gestational diabetes
C. Waage, I. Mdala, A. Brænd, A.K. Jenum, K.I. Birkeland, Norway

140 Metabolites of diacylglyceride and unsaturated fatty acid synthesis improves prediction of gestational diabetes
E.C. Francis, R.K. Johnson, C.C. Cohen, D. Dabelea, W. Perng, USA

141 Continuous glucose monitoring-derived glycaemic metrics and adverse pregnancy outcomes among women with gestational diabetes
J. Zheng, China

142 Methylation risk score for gestational diabetes on DNA methylation patterns associated with type 2 diabetes

143 Kidney disease in women with previous gestational diabetes: a nationwide, register-based cohort study
M.H. Christensen, C. Bistrup, K.H. Rubin, E.A. Nohr, C.A. Vinter, M.S. Andersen, S. Möller, D.M. Jensen, Denmark

144 Replication of interaction between PTPN22 susceptibility variants and caesarean section in type 1 diabetes risk: the Norwegian mother, father and child cohort study
L. Stene, K. Størdal, T. Skrivarhaug, G. Tapia, Norway
**OP 25  Muscles at work**

*Chair:* D. Pesta, Germany, B. Stocks, Denmark

**145 Deletion of the type 2 diabetes candidate gene SLC16A11 worsens whole body insulin sensitivity via impaired skeletal muscle metabolism in mice**

**146 A long non-coding RNA regulating skeletal muscle protein metabolism**

**147 The insulin-sensitising effect of high-intensity interval training (HIIT) is associated with increased hydroxyphenyllactic acid levels in plasma and skeletal muscle**
P.M. Møller, M.H. Petersen, M.E. De Almeida, N. Ørtenblad, J. Havelund, N.J. Færgeman, K. Højlund, Denmark

**148 The effect of 12 weeks of high intensity interval training (HIIT) on 24h rhythmicity in substrate metabolism of individuals at risk for developing type 2 diabetes**

**149 High-fat diet impairs temporal dynamics of acute exercise in mice**

**150 Acute exercise simultaneously increases GDF15 and unfolded protein response/integrated stress response signalling in skeletal muscle in obesity and type 2 diabetes**
15:30 - 17:00  Mumbai Hall

**OP 26  Many digits in digital diabetes**

*Chair:* L. Czupryniak, Poland, S. Jacob, Germany

151 Correlation of glycaemic variability in the ICU, with mortality in critically ill patients, based on data visual analytics of real world evidence
G.E. Dafoulas, I. Kalamaras, K. Votis, A. Bargiota, Greece

152 A machine learning model for basal insulin titration of people with type 2 diabetes: preliminary results
C.H. Thomsen, T. Kronborg, S. Hangaard, P. Vestergaard, O. Hejlesen, M.H. Jensen, Denmark

153 Improvement in time in range after smart pen initiation in routine clinical practice
P. Adolfsson, N.V. Hartvig, A. Kaas, N.N. Knudsen, J.K. Mader, Sweden, Denmark, Austria

154 Effect of smartphone app-based intervention on physical activity and glycemic control in patients with type 2 diabetes: a randomised controlled trial
R. Oh, S. Kim, S. Cho, Y.-B. Lee, S.-M. Jin, G. Kim, J. Kim, Republic of Korea

155 Effectiveness of a mobile platform on pregnancy outcomes in women with gestational diabetes
J. Wang, Y. Liu, Y. Gong, T. Wei, X. Li, Q. Wang, S. Luo, X. Zheng, J. Weng, China

156 Efficacy of a digital diabetes logbook: findings from a randomised controlled trial
B. Kulzer, D. Ehrmann, S. Silbermann, J. Kober, K. Finke-Groene, T. Roos, V. Schäfer, I. Vesper, N. Hermanns, Germany, Austria
15:30 - 17:00  Lima Hall

**OP 27 Adipocyte impact on obesity and metabolic health**

**Chair:** A. Bartelt, Germany, A. Kerr, Sweden

157 **Metabolic crosstalk between beta cells and adipocytes in obese youths with primary insulin hypersecretion**

158 **IGF2 promotes healthy white adipose tissue expansion by increasing preadipocyte proliferation early in life**
I. Altun, X. Yan, V. Miok, R. Karlina, S. Ussar, Germany

159 **Loss of glucose control is precipitated in formerly obese mice re-exposed to obesogenic diet**
C. Rebière, C. Rouault, F. Merabtene, K. Clément, G. Marcelin, France

160 **Relatively low plasma leptin concentrations are associated with a more favourable metabolic phenotype**
M. Chiriacò, L. Nesti, A. Flyvbjerg, A. Golay, J.A. Nazare, C.H. Anderwald, A. Mitrakou, R. Bizzotto, A. Mari, D. Tricò, A. Natali, EGIR-RISC Study Group, Italy, Denmark, Switzerland, France, Austria, Greece

161 **Homozygous nonsense mutation in LAMA4 in two siblings with partial lipodystrophy and severe metabolic syndrome**
Y. Karusheva, M. Muso, J. Tadross, B. Lam, S. Lockhart, S. Gancheva, M. Bombrich, D. Savage, M. Roden, S. O’Rahilly, UK, Germany

162 **Metabolic effects of sodium-glucose-co-transporter-4 (SGLT4) inhibition: from mouse studies to clinical translation**
15:30 - 17:00  

**Cairo Hall**

**OP 28  Novel signalling pathways regulating islet function**

*Chair:* C. Dibner, Switzerland, T. Pullen, UK

163 **Driving the pancreatic beta cell function through nanoscale features: the influence of nuclear mechanotransduction**
A. Galli, N. Dule, P. Marciani, M. Castagna, P. Milani, C. Lenardi, G. Tedeschi, C. Perego, Italy

164 **Leader beta cells within the pancreatic islets are a functionally stable subpopulation in vitro and in vivo**
L. Delgadillo Silva, P. Chabosseau, F. Yong, L. Lopez-Noriega, S. Larouche, A. Provencher-Girard, A. Prat, G. Rutter, Canada, Singapore, UK

165 **Acute and long term somatostatin signalling via the beta cell primary cilium**
T. Incedal Nilsson, Ö. Dumral, G. Sanchez, O. Idevall-Hagren, Sweden

166 **Identification of transcriptional regulators controlling beta cell differentiation**
D. Balboa, S. Moratinos, J. García-Hurtado, M.A. Maestro, J. Ferrer, Spain, UK

167 **Nutrient sensor OGT & mTORC1 crosstalk to coordinate beta cell mass and function**
S. Jo, E. Alejandro, USA

168 **Ex vivo mapping of beta cell glutamate pathways by in situ enzymatic activities and metabolic profiling using ToF-SIMS in mouse islet cryosections**
Y. Zhou, N. Baez, T. Fu, T. Brun, P. Maechler, Switzerland
17:30 - 18:30

Hamburg Hall

EASD-Novo Nordisk Foundation Diabetes Prize for Excellence

Chair: Chantal Mathieu, Belgium
Speaker: Roman Hovorka

Automated insulin delivery – diabetes tech at its best

Roman Hovorka, PhD, FMedSci, is Professor of Metabolic Technology Research at the Institute of Metabolic Science and Department of Paediatrics at University of Cambridge, UK.

He made seminal contributions to diabetes technology including the “Artificial Pancreas”, a device that delivers insulin in glucose responsive fashion.

He has been Chief Investigator on several trials evaluating the Artificial Pancreas in populations such as young children and newly diagnosed type 1 diabetes.

EASD-Novo Nordisk Foundation Diabetes Prize for Excellence

The EASD-Novo Nordisk Foundation Diabetes Prize for Excellence awards an internationally recognised researcher who has contributed significantly to advances in the understanding, prevention or treatment of diabetes or its complications.

The awardee’s research may focus on prevention, treatment and/or basic research in physiological biochemistry.

The EASD-Novo Nordisk Foundation Diabetes Prize for Excellence is generously supported by the Novo Nordisk Foundation.

EASD-Novo Nordisk Foundation Diabetes Prize for Excellence Lecturers

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17:30 - 18:30  London Hall

Michael Berger Debate: Is it time to reclassify diabetes complications because microvascular and macrovascular classification is no longer sufficient?

Chair: Martin Clodi, Austria
Speaker: Michael Roden, Germany: Pro
Guntram Schernthaner, Austria: Contra

17:30 - 18:30  Paris Hall

Debate: Should non-insulin-treated women with diabetes during pregnancy be offered Continuous Glucose Monitoring?

Chair: Rebecca M Reynolds, UK
Speaker: Helen R Murphy, UK: Yes
Elisabeth R Mathiesen, Denmark: No

17:30 - 18:30  Barcelona Hall

Obesity and cachexia: Two sides of the same coin?

Chair: Maria Rohm, Germany
Speaker: Stephan Herzig, Germany: Neuroendocrine dysregulation in obesity and cachexia
Anthony P Coll, UK: Body weight and body composition: lessons learned from obesity and cachexia
Stefan D Anker, Germany: Diabetes, cardiovascular disease, sarcopenia and cachexia
17:30 - 18:30  
**Mumbai Hall**

Diabetic retinopathy biomarkers and treatment targets from discovery to the clinic

*Chair:* Luigi Gnudi, UK  
*Speaker:* Viktor Rotbain Curovic, Denmark:  
**New biomarkers for diabetic retinopathy: What do they offer?**

Evelyn Mensah, UK:  
**New treatment approaches and clinical strategies for improving outcomes for people with advanced diabetic retinopathy?**

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17:30 - 18:30  
**Lima Hall**

NAFLD and diabetes: chicken or egg?

*Chair:* Zobair M Younossi, USA  
*Speaker:* Catherine C Cohen, USA:  
**Developmental origins of NAFLD**

Luca VC Valenti, Italy:  
**Is NAFLD a cause or a consequence of type 2 diabetes?**

Johanna K DiStefano, USA:  
**What can we learn from NAFLD genetics?**

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17:30 - 18:30  
**Cairo Hall**

Debate: Is lasting remission of type 2 diabetes feasible in the real world setting?

*Chair:* TBA  
*Speaker:* Roy Taylor, UK:  
**Yes**

Kamlesh Khunti, UK  
**No**
09:00 - 10:30  
**Hamburg Hall**

**Diabetologia Symposium: Incredible incretins - and where to find them**

*Chair:* Anna Krook, Sweden  
*Speaker:* Jens J Holst, Denmark:  
**Introduction to the field of incretins**

Fiona M Gribble, UK:  
**Mechanisms of incretin release from the intestine**

Erin Mulvihill, Canada:  
**Cardiovascular effects of incretin-based therapies**

Jonathan E Campbell, USA:  
**Pharmacology of incretins’**

09:00 - 10:30  
**London Hall**

**What have cohort studies taught us about the natural history of type 2 diabetes?**

*Chair:* Amalia Gastaldelli, Italy  
*Speaker:* Sun Kim, USA:  
**The Stanford cohort**

Femke Rutters, Netherlands:  
**The Hoorn Study**

Andrea Natali; Italy:  
**The EGiR-RISC study**

Lars Lind, Sweden:  
**ULSAM**

Amalia Gastaldelli, Italy:  
**Summary giving the clinical perspective for the future**
08:50 - 10:30
Rising Star Symposium

Chair: Tina Vilsbøll, Denmark

Speaker: Luca D’Onofrio:
Small fiber neuropathy in autoimmune diabetes: the role of inflammation

Alessandro Mengozzi, Switzerland:
Cardiometabolic epigenetics: targeting the early damage

Theresa Sarabhai, Germany:
Overnutrition and its impact on whole-body insulin sensitivity: a look behind the curtain

Lærke Smidt Gasbjerg:
The physiology of gut hormones within human postprandial nutrient handling

RISING STAR SYMPOSIUM AND FELLOWSHIP

The EASD Rising Star Symposium and EFSD Rising Star Fellowship Programme aims to identify promising and innovative young researchers who are developing their research activities in Europe.

The Rising Star Symposium and Fellowship is generously supported by Novo Nordisk.
09:00 - 10:30 Barcelona Hall

Image-in’ what noninvasive techniques can do for diabetes research and care!

Chair: Roy Taylor, UK

Speaker: Louise Thomas, UK: 
Adipose tissue distribution and non-invasive tissue characterization in insulin resistance

Lars Johansson, Sweden: 
Novel insights from nuclear imaging techniques

Vera Schrauwen-Hinderling, Netherlands: 
Magnetic Resonance Spectroscopy in the investigation of insulin resistance and diabetes

09:00 - 10:30 Mumbai Hall

Metabolic disease and the circle of life

Chair: Allan A Vaag, Denmark

Speaker: Susan E Ozanne, UK: 
Developmental programming of metabolic disease by maternal obesity

Raffaele Teperino, Germany: 
Paternal genetics and epigenetic programming of offspring health

J Andrew Pospisilik, USA: 
Is there a role of factors operating beyond genes and environment in metabolic diseases?
09:00 - 10:30  Lima Hall

7th EASD-AASD Joint Symposium: Can COVID-19 help us deliver a whole system holistic healthcare?

Chair: Sean Dinneen, Ireland and Kyu Chang Won, Korea

Speaker: Marc Evans (UK):
Lessons from COVID-19: approaching the challenge of dealing whole system health care value: What can we learn in diabetes care?

Masaki Uchihara (JP):
Impact of COVID-19 on diabetes care in Japan

Rose Stewart (UK):
Lessons learned from COVID-19: a diabetes psychologist’s perspective

Andrea OY Luk (HK):
Telemedicine in people with diabetes: COVID-19 and beyond

09:00 - 10:30  Cairo Hall

Precision medicine in diabetes: complexity and pragmatism

Chair: Marie-France Hivert (US)

Speaker: Paul W Franks (SE):
ADA/EASD Precision Medicine in Diabetes Initiative: executive summary of the second consensus report

Claudia Langenberg (UK):
Multiomics for precision medicine in diabetes

Shivani Misra (UK):
Precision medicine in diabetes: generalisability and equity
10:45 - 12:15       Hamburg Hall

**OP 29  Cardiac complications in type 1 and type 2 diabetes**

*Chair:* V. Fejfarova, Czech Republic, J. Petrie, UK

**169 Trends in survival after first myocardial infarction in people with diabetes**

**170 Acute myocardial infarction and heart failure in young patients with type 1 and type 2 diabetes**
P. Dikaiou, M. Lind, J. Ludvigsson, G. Lappas, L. Björck, A. Rosengren, Sweden

**171 Effects of dapagliflozin in type 2 diabetes and heart failure with mildly reduced or preserved ejection fraction across the background of glucose-lowering therapy in DELIVER**

**172 Association of clinical characteristics with sudden cardiac arrest in people with type 2 diabetes with and without CVD: a longitudinal case-control study on primary care data**

**173 Duration of type 2 diabetes increases risk of third-degree atrioventricular block**
S. Haxha, K.K. Sørensen, S.B. Haugaard, M.H. Ruwald, A. Halili, B.T. Philbert, L. Køber, G.H. Gislason, C. Torp-Pedersen, C.N. Bang, Denmark

**174 Glycaemia and cardiac arrhythmias in people with type 1 diabetes: a prospective observational study**
OP 30  Years and years

Chair:  S. Gudbjornsdottir, Sweden, A. Sandforth, Germany

175 Effect of low dose aspirin on incident diabetes among older adults: post hoc analysis of the ASPREE randomised placebo-controlled trial

176 Incident type 2 diabetes among users of denosumab and alendronate: a Danish cohort study
R. Viggers, J. Starup-Linde, I. Leegaard, P. Vestergaard, Denmark, Germany

177 Prescribing trends of anti-diabetes medications near end of life among older adults with type 2 diabetes: a nationwide cohort study
A. Kutz, D.H. Kim, E. Patorno, USA

178 Age discrepancies in the use of glucose-lowering medications: a nationwide cohort study
K. Johansson, T. Petersen, M. Christensen, Denmark

179 UKPDS blood pressure study 34 year follow-up
R.L. Coleman, A.I. Adler, P. Clarke, J. Leal, W. Whiteley, R.R. Holman, UK

180 MODY in older onset diabetes is common and identification can improve treatment: analysis of >72,000 people
10:45 - 12:15 Paris Hall

**OP 31  Future for type 1 diabetes treatment**

*Chair:* D. Balboa, Spain, I. Artner, Sweden

181 Exploring the role of transcription factors HNF1A, HNF1B, and HNF4A in human induced pluripotent stem cell-derived pancreatic islet cell differentiation
L. Unger, A. Friestad, T.A. Legøy, L.M. Ghila, S. Chera, Norway

182 Both MAFA and MAFB are required for acquisition of glucose-stimulated insulin secretion (GSIS) in human pluripotent stem cell-derived islets
A. Allouch, A. Diane, R. Abdulmuumin, H.H. Al-Siddiqi, Qatar

183 Role of arginine methylation of Neurogenin 3 in hESCs during development into the pancreatic endocrine cell in vitro
Y.-M. Han, Republic of Korea

184 Islet allotransplantation into pre-vascularised Sernova Cell Pouch™: results from the first patient cohort

185 ADO12, a new allogenic islet encapsulation device for islet transplantation without immunosuppression
A.-L. Gaffuri, A. Geissler, O. Jouannot, X. Gaume, C. Gautier, Y. Courbebaisse, R. Eloy, K. Bouzakri, O. Soula, France

186 Multi-component pancreatic islet cells-encapsulated microfiber grafts for treatment of diabetes
Z. Huan, L. Li, China
OP 32  Obesity, liver and beyond

Chair:  C. Cohen, USA, J. Gojda, Czech Republic

187 The effect of five days eucaloric changes in dietary carbohydrate and fat availability in the regulation of hepatic lipid content in obese men

188 Epigenetic and gene regulatory effects on liver metabolism in systemic dyslipidaemia and insulin resistance in a preclinical model

189 Preadipocyte-secreted Cilp1 mediates the communication of adipose with liver and promotes hepatic steatosis
Y. Bi, S. Huang, China

190 Normal-weight visceral obesity promotes a higher 10-year atherosclerotic cardiovascular disease risk in patients with type 2 diabetes

191 Glycaemic control determines the relationship of whole-body insulin resistance with liver mitochondrial capacity in obesity

192 Hepatology referral of outpatients with type 2 diabetes and suspected NAFLD: comparison between EASL and AGA algorithms
10:45 - 12:15  
Mumbai Hall

**OP 33  Are we what we eat?**

*Chair:* N. Guess, UK, F. Pattou, France

193 The effect of a dietary intervention on insulin requirements in type 1 diabetes: a 12-week randomised clinical trial  
H. Kahleova, T. Znayenko-Miller, K. Smith, R. Holubkov, N. Barnard, USA

194 The effect of carbohydrate intake on glycaemic control in type 1 diabetes: a randomised cross-over study  

195 Effect of intestinal exposure to endogenous bile acids on the incretin axis in type 2 diabetes  
C. Xie, W. Huang, M. Bound, J. Grivell, K. Jones, M. Horowitz, C. Rayner, T. Wu, Australia

196 The effect of dietary branched-chain amino acid restriction during forearm immobilisation on whole-body and muscle insulin sensitivity  

197 The effect of adding different volumes of exercise training to diet-induced weight loss on body composition in persons with type 2 diabetes  

198 The effect of circuit training, empagliflozin or "vegeterranean diet" on metabolic and physical functions in older adults with type 2 diabetes (CEV-65 trial)  
A. Buch, O. Kis, Y. Greenman, N. Stern, R. Eldor, Israel
**OP 34  Diabetic neuropathy from the brain to the bowels**

*Chair:* B.A. Perkins, Canada, H. Shah, USA

199 Preservation of thalamic mitochondrial and neuronal function in Painful-Diabetic Peripheral Neuropathy: a multi-modal cerebral imaging study  
G. Sloan, D. Selvarajah, A. Anton, K. Teh, I.D. Wilkinson, S. Tesfaye, UK

200 Association of microvascular complications with reduced neuronal activity and cognitive impairment in type 2 diabetes: a resting-state fMRI study  
W. Wang, X. Yang, B. Lu, P. Gu, X. Hui, J. Shao, China

201 Lipid parameters and risk of diabetic polyneuropathy in type 2 diabetes: a Danish cohort study  
F.P. Kristensen, D.H. Christensen, B.C. Callaghan, H.T. Sørensen, R.W. Thomsen, Denmark, USA

202 Preclinical efficacy of the novel GPR40 agonist CPL207-280 in neuropathy  

203 Prevalence of diabetic neuropathies in individuals with type 1 and type 2 diabetes in a tertiary outpatient clinic: the DANES cohort study  
H. Mizrak, H. Kufaishi, S.K. Hecquet, T.W. Hansen, R. Pop-Busui, P. Rossing, B. Brock, C.S. Hansen, Denmark, USA

204 Overall gastrointestinal symptom burden is associated with diabetic autonomic neuropathy: a DANES cohort study  
H. Kufaishi, H.I. Mizrak, B. Brock, P. Rossing, C.S. Hansen, Denmark
10:45 - 12:15

Cairo Hall

**OP 35** Omics and more: unbiased approaches to tackle obesity

*Chair:* K. Højlund, Denmark, A. Loft, Denmark

**205 Metabolic heterogeneity in obesity: the interplay between metabolome and microbiome reflects visceral adipose tissue physiology beyond BMI**
R. Chakaroun, M. Pradhan, H. Brolin, M. Schöler, G. Bergström, V. Tremaroli, F. Bäckhed, Sweden

**206 Deep phenotyping of glucose stimulation response in human adipocytes at scale**
P. Kubitz, H. Dashti, F.R. Dos Santos, R. Kaalia, J. Perez-Schindler, H. Hauner, M. Claussnitzer, Germany, USA

**207 Whole-body measurement of fatty acid uptake in fasting and postprandial conditions**

**208 Genetic dissection of serum vaspin highlights its causal role in lipid metabolism**

**209 Genetic variants in the adiponectin receptor genes are associated with adiponectin and insulin levels**
L. Kedenko, T. Kiesslich, I. Kedenko, B. Paulweber, Austria

**210 Investigating gut epithelial adaptations to metabolic disease**
M. Jacobs, Y. Lei, N. Haq, M. Wilson, T. Pullen, P. Pavlidis, B. Hayee, G. Bewick, UK
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<td>Diabetes: a systemic disease.</td>
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<td>NAFLD: relevant biomarkers.</td>
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12:45 - 13:45  Cairo Hall

EASD e-Learning expert session

Chair: TBA  
Speaker: TBA

13:00 - 13:45  Spotlight Stage

Career development in diabetes research: an EASD Early Career Academy panel discussion

Chair: Shivani Misra, UK  
Panellists: Cantal Mathieu, Belgium  
           Amalia Gastaldelli, Italy  
           Paloma Alonso-Magdalena, Spain  
           Abd Tahrani, UK
## Short Oral Discussions Event F

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<td>SO 90 Epidemiology of cardiovascular disease in diabetes: What is new?</td>
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<td>SO 96 NAFLD: future treatment</td>
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14:00 - 15:00

Cairo Hall

EASD e-Learning expert session

Chair: TBA
Speaker: TBA

14:00 - 14:45

Spotlight Stage

Immunotherapy and beta cell preservation in type 1 diabetes: from clinical trials to clinical practice

Chair: TBA
Speaker: Peter A Senior Canada:
Immunotherapies in type 1 diabetes: Are they worth the hype?

Colin M Dayan UK:
Immune therapies in type 1 diabetes: translation into your clinical practice

Discussion and closing remarks
OP 36  **Cardiovascular risk, complications and fitness**

*Chair:* A. Andersen, Denmark, M. Haluzik, Czech Republic

211 Detailed metabolic biomarker profiling improves cardiovascular risk assessment in type two diabetes patients already receiving statin therapy
H. Julkunen, J. Barrett, P. Würtz, Finland

212 Effects of type 2 diabetes and obesity on cardiopulmonary performance
L. Nesti, N. Pugliese, L. Santoni, M. Chiriacò, L. Sacchetta, D. Tricò, A. Natali, Italy

213 Increase in cardiorespiratory fitness during a lifestyle intervention associates with lower progression and higher regression of subclinical atherosclerosis
K. Kantartzis, J. Machann, F. Schick, A. Birkenfeld, L. Fritsche, A. Peter, A. Fritsche, N. Stefan, A. Lehn-Stefan, Germany

214 Hypoglycaemia-related disorders are associated with preclinical atherosclerosis in patients with type 1 diabetes without high cardiovascular risk
A. Mesa, M. Giménez, V. Perea, C. Viñals, J. Blanco, I. Vinagre, T. Serés-Noriega, L. Boswell, E. Esmatjes, I. Conget, A. Amor, Spain

215 Mortality in the Swedish Obese Subjects (SOS) study over up to 30 years in relation to 2-year diabetes remission after bariatric surgery or usual care

216 Exploring potential risk factors for lower limb amputation in people with diabetes: an observational cohort study of 66,565 individuals with diabetes in Sweden
**15:30 - 17:00**

**London Hall**

**OP 37**  **Inflammation: foe or friend?**

*Chair:* M. Ried-Larsen, Denmark, C.D.A. Stehouwer, Netherlands

217 A longitudinal clinical trajectory analysis examining the accumulation of co-morbidity in people with type 2 diabetes compared with non-type 2 diabetes


218 Mediation of the association between abdominal adiposity and subclinical inflammation in type 2 diabetes


219 Interleukin 1β regulates white adipose tissue remodelling by targeting adipocyte precursors


220 Bariatric arterial embolisation vs bariatric surgery: comparison of effects in obese patients with type 2 diabetes


221 Inflammatory markers are elevated in type 1 and type 2 diabetes and linked to long-term complications

J.I. Van Heck, R. Stienstra, L.A. Joosten, C.J. Tack, Netherlands

222 Netosis mediates diet-induced metabolic impairment by sensing the microbiota leading to type 2 diabetes

M. Albiero, L. Migliozzi, S. Cicliiot, A. Rodella, F.I. Amendolagine, C. Boscaro, L. Treu, S. Campanaro, G.P. Fadini, Italy
OP 38  How dreaming about artificial pancreas enters the real world (data)

Chair:  T. Battelino, Slovenia, T. Klupa, Poland

223 The use of optimal system settings in real-world MiniMed 780G system users has a large impact on increasing the time in tight glucose range
J. Castaneda, T. Van den Heuvel, A. Arrieta, O. Cohen, Switzerland

224 Real-world evidence from MiniMed 780G system users in Europe, Middle East, and Africa: results from 61 481 users across 31 countries

225 Real-world glycaemic outcomes of >12,200 adults with type 1 diabetes using the Omnipod® 5 Automated Insulin Delivery (AID) system with cloud-based data management

226 Sustained improvement of glycaemic control and patient-reported outcomes after 12 months of advanced hybrid closed-loop in type 1 diabetes in real-world

227 Fully closed loop system for the treatment of type 1 diabetes: a real-world prospective observational study

228 What does upgrading from hybrid closed-loop systems to advanced hybrid closed-loop systems mean for children and adults with type 1 diabetes in real-world practice?
P. Beato-Víbora, E. Gil-Poch, F.J. Arroyo-Díez, Spain
15:30 - 17:00

**Barcelona Hall**

**OP 39** Pregnancy, diabetes and metabolic health (of mother and child)

*Chair:* F. Dunne, Ireland, A. Kautzky-Willer, Austria

**229** Copenfast trial: foetal growth and glycaemic control in pregnant women with type 1 or type 2 diabetes randomised to faster-acting insulin aspart or insulin aspart
S. Nørgaard, J. Søholm, E. Mathiesen, K. Nørgaard, T. Clausen, P. Holmager, N. Do, P. Damm, L. Ringholm, Denmark

**230** Randomised trial of automated insulin delivery in pregnant women with type 1 diabetes

**231** Reducing sedentary time in obese pregnant women is related to greater placenta IL-6 expression: a mechanism linking reduced sedentary behaviour with lower neonatal adiposity
P. Acosta Manzano, G. Desoye, D. Hill, M. Van Poppel, the DALI core investigator group, Austria, Canada

**232** Maternal diet, nutrition and metabolism in the first trimester influences offspring beta cell function at birth
C.L. Meek, Z. Stewart, S. Furse, S. Neoh, D. Feig, A. Koulman, H.R. Murphy, UK, Australia, Canada

**233** One-hour versus two-hour post-load hyperglycaemia subtypes of gestational diabetes and the risk of adverse pregnancy outcomes
Y. Gong, J. Wang, X. Zheng, S. Luo, China

**234** Identification of miRNAs associated to peroxisome proliferator-activated receptor gamma in pancreatic metabolic adaptation during pregnancy
15:30 - 17:00  
Mumbai Hall

**OP 40**  
**What is new in 2023 for the treatment of diabetic kidney disease?**

*Chair: J. Karalliedde, UK, D.H. Van Raalte, Netherlands*

235 Renal effects of empagliflozin alone or in combination with semaglutide in albuminuric type 2 diabetes: a randomised, placebo-controlled trial  
S. Sivalingam, V. Soendergaard Wasehuus, V. Rotbain Curovic, T. Willum Hansen, F. Persson, P. Rossing, Denmark

236 The impact of obstructive sleep apnoea treatment on chronic kidney disease in patients with type 2 diabetes: results from a 2-year feasibility RCT  

237 Sodium-glucose cotransporter-2 inhibitors decrease oxygen consumption in adults with type 2 diabetes: a randomised clinical trial using $^{11}$C-Acetate PET imaging  
D.H. Van Raalte, A.C. Hesp, L.I. Snel, P.R. Schober, L.A. Schwarte, R. Boellaard, P. Bjornstad, Netherlands, USA

238 Liraglutide's kidney-protective effect in type 1 diabetes: modulating macrophage polarisation via selective NADPH oxidase activity  
A. Eid, N. Youssef, M.H. Noureldain, S. Al Moussawi, Lebanon

239 Additive effect of SGLT2 inhibition and CB1R antagonism in the fight against diabetic nephropathy  

240 Cystatin C-based eGFR increases with administration of estradiol and decreases with testosterone, indicating biological effects of sex hormones on kidney function  
S. Van Eeghen, C. Wiepjes, N. Nokoff, P. Bjornstad, M. Den Heijer, D. Van Raalte, Netherlands, USA
15:30 - 17:00
Lima Hall

**OP 41**  **SNPs, risk scores and gene therapy**

*Chair:* C. Ling, Sweden, G. Sebastiani, Italy

**241 Analyses of type 2 diabetes partitioned polygenic scores among Asian Indian and European populations**

**242 Impact of the TCF7L2 rs7903146 type 2 diabetes risk variant on clinical presentation in recently diagnosed patients with type 2 diabetes**

**243 Discovery of a new treatment for a novel form of rare diabetes caused by an insulin gene mutation using patients’ iPSC-derived beta cells**

**244 Pnliprp1 (pancreatic lipase related protein 1) hypermethylation in the exocrine pancreas links type 2 diabetes to pancreatic cancer development: an EWAS study**
L. Maurin, L. Ning, M. Boissel, L. Marselli, F. Pattou, J. Kerr-Conte, P. Marchetti, A. Bonnefond, P. Froguel, A. Khamis, France, Italy, UK

**245 Application of multiomics to identify novel molecular mechanisms of atherosclerotic plaque instability in type 2 diabetes patients**
V. Das, X. Zhang2, D. Djordjevic, O. Bergman, M. Chemaly, D. Shungin, N. Michaelsen, K. Knape, U. Hedin, L. Matic, Denmark, Sweden

**246 Gene therapy for maturity-onset diabetes of the young type 3 (MODY3)**
E. Casana, V. Jimenez, M. Garcia, A. Casellas, M. Morró, A. Pujol, T. Ferré, V. Sacristan, C. Jambrina, X. León, L. Vila, S. Franckhauser, F. Bosch, Spain
15:30 - 17:00

Cairo Hall

**OP 42 Risk factors and biomarkers of CVD**

*Chair:* D. Dabelea, USA, T. Dejgaard, Denmark

**247 Real-life use of novel glucose lowering agents in coronary artery disease: experience from the SWEDHEART-registry**
V. Ritsinger, K. Avander, B. Lagerqvist, P. Lundman, A. Norhammar, Sweden

**248 Impact of remission of type 2 diabetes on cardiovascular structure and function, exercise capacity and risk profile: a propensity matched analysis**

**249 Association of low muscle mass with increased all-cause and cardiovascular disease mortality in patients with diabetes**
J.-M. Yu, C.-M. Oh, S. Moon, D. Kim, Republic of Korea

**250 Risk of cardiovascular and mortality outcomes in Korean type 2 diabetes and prediabetes: a nationwide population-based cohort study**

**251 Central obesity and the risk of coronary artery disease event according to albuminuria stages in adults with type 1 diabetes**
E. Bezerra Parente, V. Harjutsalo, P.-H. Groop, Finland

**252 Adult-onset type 1 diabetes subphenotypes: a cluster analysis**
17:30 - 18:15  
Hamburg Hall  

58th Minkowski Lecture  

Chair: Chantal Mathieu, Belgium  

Speaker: Timo Müller, Germany:  

Novel insights into regulation of energy and glucose metabolism by GIP and GIPR:GLP-1R co-agonists  

Dr. Timo Müller studied Animal Physiology at the Philipps-University Marburg, Germany. In 2009, he received his PhD at the Department of Child and Adolescent Psychiatry and Psychotherapy, University of Duisburg-Essen, Germany.  

He then moved on to work as a postdoctoral fellow at the Metabolic Disease Institute, University of Cincinnati, USA. In 2011, Timo Müller returned to Germany, where he ever since leads the Division of Molecular Pharmacology at the Institute for Diabetes and Obesity (IDO), Helmholtz Munich. Since 2018 Timo Müller is the acting director of the IDO.  

In 2019, he received the Venia legendi for experimental pharmacology from the Medical Faculty at the University of Tübingen, Germany. Dr. Müllers research is focused on the development and evaluation of novel unimolecular pharmacotherapies to treat the metabolic syndrome, and in particular obesity and diabetes.  

He published >150 manuscripts, including articles in Cell, Cell Metabolism, Nature Medicine, Nature Metabolism, and Nature Communications. As postdoctoral fellow, he discovered that that adipose-specific loss of p62 leads to extreme obesity in mice (Müller et al., J Clin Invest 2013) and identified GPR83 as a regulator of energy metabolism (Müller et al., Nat Commun 2013). He established the concept of glucagon-mediated hepatic delivery of T3 to enhance lipid and cholesterol metabolism (Finan et al. Cell 2016) and showed GLP-1-mediated delivery of oestrogen to restore beta-cell mass in diabetic mice (Sachs et al. Nat Metab 2020), while GLP-1-mediated delivery of Tesaglitazar improves systemic glucose metabolism (Quarta et al., Nat Metab 2021). He further refuted the concept that alternatively activated macrophages regulate adaptive thermogenesis (Fischer et al., Nat Med 2017), identified the signal mechanism of how p62 regulates energy metabolism (Fischer et al., Nat Commun 2020) and identified the CNS GIP receptor as a key regulator of body weight (Zhang et al., Cell Metab 2021). He also published two of the most cited manuscripts of Molecular Metabolism (Müller et al., Mol Metab 2015 and Müller et al., Mol Metab 2019) and demonstrated the importance of the GIP receptor for the insulinotropic action of Tirzepatide (El et al., Nat Metab 2023).
EASD Minkowski Prize

The Minkowski Prize awards research contributing to the advancement of knowledge concerning diabetes which has been carried out by an EASD member normally residing in Europe.

The prize will be awarded to an outstanding researcher with no more than ten years full time experience as an independent investigator in the year of the nomination.

The Minkowski Prize is generously supported by Lilly.

EASD Minkowski Lecturers

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17:30 - 18:30  London Hall

‘With a little help from my friends’: What can we learn from other specialities?

Chair: Jelizaveta Sokolovska, Lithuania

Speaker: Anna Tomaszuk-Kazberuk, Poland:
Diabetes and heart failure

Simon HC Anderson, UK:
Diabetes and the bowel/intestines

Venu Kavarthapu, UK:
Diabetic foot surgery

17:30 - 18:30  Paris Hall

SURMOUNT-4 Trial results: the impact of tirzepatide on maintenance of weight reduction and benefits of continued therapy

Chair: John PH Wilding UK

Speaker: Naveed Sattar, UK:
SURMOUNT-4 background, rationale, design and baseline characteristics

Louis J Aronne, USA:
SURMOUNT-4 Study efficacy and safety results

Filip K Knop, Denmark:
Commentary
17:30 - 18:30  Barcelona Hall

Adipose tissue heterogeneity: cellular and molecular aspects

Chair: Bilal N Sheikh, Germany  
Speaker: Alexander Bartelt, Germany: Adipocyte health and metabolic disease

Anne Loft, Denmark: Human adipose tissue adaptation and crosstalk in response to obesity and weight loss  
Lauren M Sparks, USA: Healthy ageing, physical activity and adipose tissue metabolism: roles in insulin resistance and type 2 diabetes

17:30 - 18:30  Mumbai Hall

Sweet Odyssey 2022: computing optimal care for complications

Chair: Anna Solini, Italy  
Speaker: Andrew J Barkmeier, USA: Can AI save the eye? Protecting vision through enhanced screening and management of diabetic retinopathy

Marjolein M Iversen, Norway: Treating diabetic foot and not touching it: magic or real possibility?  
Juliana CN Chan, Hong Kong: mHealth for unhealthy kidneys in diabetes
17:30 - 18:30 Lima Hall

Diabetic Cardiomyopathy (DbCM): a severe complication of diabetes

Chair: Stefano Del Prato, Italy
Speaker: Gary D Lopaschuk, Canada:
Diabetic Cardiomyopathy: molecular mechanism

TBA:
Diagnosis of Diabetic Cardiomyopathy based on circulating marker of disease, lessons from the baseline analysis of the ARISE-HF study

followed by Q&A

17:30 - 18:30 Cairo Hall

Chronic Kidney Disease in type 1 diabetes

Chair: Peter Rossing, Denmark
Speaker: Katherine R Tuttle, USA:
Unmet need the epidemiology of CKD and type 1 diabetes

Hiddo JL Heerspink Netherlands: Clinical trials in type 1 with CKD

Q&A

Peter Rossing, Denmark: Summary and close
**EASD-Lilly Centennial Anniversary Prize Lecture**

*Chair:* Francesco Giorgino, Italy  
*Speaker:* Gerald Shulman:  
**The role of ectopic lipid in insulin resistance and cardiometabolic disease**

Dr. **Gerald Shulman** is the George R. Cowgill Professor of Physiological Chemistry, Professor of Internal Medicine and Cellular & Molecular Physiology at Yale University. He is also Co-Director of the Yale Diabetes Research Center and an Investigator of the Howard Hughes Medical Institute for 21 years.

Dr. Shulman has pioneered the use of magnetic resonance spectroscopy combined with stable isotopes and mass spectrometry to non-invasively examine intracellular glucose and fat metabolism in humans that have led to several paradigm shifts in our understanding of type 2 diabetes, including the molecular mechanisms by which ectopic lipids promote liver and muscle insulin resistance, as well as developing new drugs for the treatment of type 2 diabetes, nonalcoholic fatty liver disease and nonalcoholic steatohepatitis.

Dr. Shulman is the recipient of the Stanley J. Korsymeyer Award from the American Society for Clinical Investigation, the Outstanding Clinical Investigator Award from the Endocrine Society, the Solomon Berson Award from the American Physiological Society and the Banting Medal for Lifetime Scientific Achievement from the American Diabetes Association.

Dr. Shulman is a Fellow of the American Association for the Advancement of Science, Inaugural Fellow of the American Physiological Society, Mastership in the American College of Physicians, Mastership in the American College of Endocrinologists, Fellowship in the Royal College of Physicians (Lon) and he has been elected to the American Society for Clinical Investigation, the Association of American Physicians, the National Academy of Medicine, the American Academy of Arts and Sciences and the National Academy of Sciences.
**EASD-Lilly Centennial Anniversary Prize**

The EASD-Lilly Centennial Anniversary Prize recognise individual researchers who have significantly contributed through innovative approaches to the development and evolution of treatment and management of diabetes.

Starting in 2022, the award will be bestowed for three consecutive years on the occasion of the EASD Annual Meeting. Each year will identify the awardee among those who have contributed to three different fields:

- **2022:** Innovative pharmacologic therapies, awarded to M.Tschöp, Germany
- **2023:** Landmark achievements in the pathogenesis of diabetes
- **2024:** Clinical and diagnostic innovation in the management of diabetes and its complications

The EASD-Lilly Centennial Anniversary Prize is generously supported by Lilly.

**09:00 - 10:00 London Hall**

**Current status on stem cell derived islets: Ready for the clinic?**

*Chair:* Karim Bouzakri (FR)

*Speaker:* Timo Otonkoski (FI):
**Functional, metabolic and transcriptional maturation of human pancreatic islets derived from stem cells**

Malin Fex (SE):
**Generation of glucose responsive stem cells: a way to better understand mechanisms that regulate insulin secretion**

Miriam Cnop (BE):
**Stem cells to understand the role of specific mutations in impaired insulin secretion and diabetes development**
09:00 - 10:00  
**Paris Hall**

**Turning down the thermostat for metabolic health!**

*Chair:* Joris Hoeks, Netherlands  
*Speaker:* Denis Blondin (CA):  
**Cold exposure as a therapeutic strategy for type 2 diabetes**

Lawrence Kazak (CA):  
**Novel pathways of thermogenesis in adipose tissues**

Tore Bengtsson (SE):  
**Beta-adrenergic stimulation and glucose homeostasis**

09:00 - 10:00  
**Barcelona Hall**

**Debate: SGLT-2 or not 2 that is the question? All people with diabetes and CKD should be on SGLT-2 Inhibition by default**

*Chair:* Erika Bezerra Parente, Finland  
*Speaker:* Andrew H Frankel, UK:  
**Yes**

Daniel R. van Raalte, Netherlands:  
**No**

09:00 - 10:00  
**Mumbai Hall**

**EASD/ESC Symposium: Does increased glucose variability harm the vessels or organs?**

*Chair:* Tina Vilsbøll, Denmark  
*Speaker:* Michael Resl, Austria:  
**Cell and animal studies and data in non-diabetic subjects!**

Guillermo Umpierrez, USA:  
**What data do we have from studies in diabetic patients?**
09:00 - 10:00  
**Lima Hall**

**Sexual orientation, gender identity and cardiometabolic risk**

Chair: Christian Herder, Germany

Speaker: Carl G. Streed, USA:  
_Epidemiologic trends and disparities in diabetes risk factors among LGBTQ populations_

Dorte Glintborg, Denmark:  
_Cardiometabolic aspects of transgender healthcare_

09:00 - 10:00  
**Cairo Hall**

**Treatment strategies to prevent or attenuate renal impairment in type 2 diabetes**

Chair: Martin Haluzik, Czech Republic

Speaker: Ofri Mosenzon, Israel:  
_Non-insulin therapies in patients with type 2 diabetes and renal impairment in 2023: current status and new perspectives_

Tahseen Chowdhury, UK:  
_Treatment of diabetes in patients with severe renal impairment_
10:30 - 12:00

**OP 43  Old dogs, new tricks**

*Chair:* R. Cordiner, UK, M. Löndahl, Sweden

253 Efficacy and safety of pioglitazone/metformin fixed-dose formulation vs uptitrated metformin in type 2 diabetes with inadequate glycaemic control: a randomised trial

L. Guo, China

254 Treatment outcomes with oral anti-hyperglycaemic therapy for people with diabetes secondary to chronic pancreatitis: matched population based cohort study


255 The impact of timing of metformin administration on glycaemic and glucagon like peptide 1 responses to intraduodenal glucose in type 2 diabetes

T. Wu, C. Xie, P. Iroga, M. Bound, J. Grivell, W. Huang, Y. Sun, K. Jones, M. Horowitz, C. Rayner, Australia

256 A systematic review and meta-analysis of participant characteristics in the prevention of gestational diabetes: a summary of evidence for precision medicine

S. Lim, W. Takele, K.K. Vesco, L. Redman, ADA/EASD Precision Medicine in Diabetes Initiative GDM Prevention Working Group, J. Josefson, Australia, USA
10:30 - 11:30
London Hall

**OP 44 Checking in on beta cell function**

*Chair:* M. Buitinga, Netherlands, M. Laimer, Switzerland

**257 An improved $^{68}$Ga-exendin4 PET-CT method to assess noninvasively pancreatic beta cell mass: studies in long standing type 1 diabetes patients and in obese people**
R.C. Bonadonna, S. Migliari, M. Scarlattei, R.E. Ledda, V. Spigoni, G. Baldari, R. Aldigeri, G. Cinquegrani, A. Dei Cas, L. Ruffini, Italy

**258 Residual beta cell function associates with lower glycaemic variability and more time in range in individuals with type 1 diabetes**

**259 Association between dynamics of circulating proteins and of beta cell function in type 2 diabetes: an IMI DIRECT study**

**260 The C-peptide-glucose ratio as a marker for insulin secretion predicts future insulin treatment and glycaemia in persons with recent-onset type 2 diabetes**
10:30 - 11:30

Paris Hall

**OP 45** Thinking outside the box to protect the kidney and the foot

*Chair:* P. Vas, UK, G. Gruden, Italy

261 Dapagliflozin protects against urban particulate matter-induced EMT in tubular epithelial cells

J. Kim, C. Kang, W. Lee, Republic of Korea

262 Up-regulation of ICAM-1 and ESM 1 by intermittent hypoxia via down-regulation of microRNA-181a1 in vascular endothelial cells


263 The effect of treatment with umbilical cord blood platelet lysate gel on diabetic foot ulcer: an open-label randomised controlled study


264 Inhibition of microRNA-34a signalling impairs wound healing in diabetes through regulating macrophage polarisation

10:30 - 11:30 Barcelona Hall

**OP 46** Endothelium and diabetes complications

*Chair:* T. Nyström, Sweden

**265 Activation of the Nrf2 pathway offers microvascular protection against recurrent hypoglycaemia in type 1 diabetes**

**266 Recombinant SIRT1 rescues metabolic cardiomyopathy in the Db/+mice by reprogramming the myocardial lipid signature**

**267 Continuous representation of type 2 diabetes heterogeneity on a tree-like graph structure stratifies risk of complications**

**268 Endothelial-specific deletion of lysine methyltransferase Set7 protects mice from obesity and insulin resistance-related endothelial dysfunction**
J. Sánchez-Ceinos, P. Döttling, M. Jakobsson, A. Vegvari, F. Cosentino, Sweden
10:30 - 11:30        Mumbai Hall

**OP 47  Senescence and age**

*Chair: U. Smith, Sweden*

**269** The RNA-binding protein ZMAT3 is increased by insulin and contributes to hyperinsulinaemia-induced senescence and insulin resistance in human cells
R. Spinelli, P. Florese, F. Beguinot, A. Nerstedt, U. Smith, Sweden, Italy

**270** Positive effects of bariatric surgery are associated with attenuation of cellular senescence
S. Stemberkova Hubackova, T. Havrlantova, I. Simonik, M. Mraz, M. Haluzik, Czech Republic

**271** Loss of the armadillo-repeat protein Plakophilin-2 in obesity breaks cell cycle dynamics to breed adipocyte senescence

**272** Defining the role of adipose-glucocorticoid signalling in age-related cardiometabolic disorders
C. Beaupere, H. Soula, K. Poussin, A. Grosfeld, C. Vigouroux, M. Moldes, B. Fève, France
**10:30 - 11:30**  
**Lima Hall**

**OP 48  Different approaches to map signal pathways in islet cells**

*Chair:*  J.-C. Jonas, Belgium

**273 The heterogeneity of islets in the healthy pancreas: calcium reveals different responses**  
E. Nikitina, C.M. Cohrs, S. Speier, Germany

**274 Ex vivo mapping of metabolic pathways assessed by in situ enzymatic activities in pancreatic islets during development of diabetes in mice and humans**  
N. Baez, Y. Zhou, E. Schöniger, N. Kipke, D. Friedland, M. Barovic, Y. Morgenroth, M. Distler, T. Brun, M. Solimena, P. Maechler, Switzerland, Germany

**275 Signal Regulatory Protein Alpha (SIRPA) mitigates STAT1 activity and protects human beta cells by targeting HDAC6**  
K. Afi Leslie, C. Lekka, S.J. Richardson, M.A. Russell, N.G. Morgan, UK

**276 Pleiotropic effects of imeglimin on pancreatic alpha cells at single-cell resolution**  
T. Tsuno, R. Inoue, K. Nishiyama, J. Shirakawa, Japan
10:30 - 11:30 Cairo Hall

**OP 49 Caring for care delivery**

*Chair:* P. Kempler, Hungary, A. Solini, Italy

**277 Estimating health resource utilisation cost reduction through provision of specialist obesity reduction services by sex and age groups in main health localities in England**

**278 Age and sex as mediators of response to an online self-management package (nutritional, behavioural and psychological) in type 2 diabetes: the BEATdiabetes study**

**279 AMD Annals: an initiative for the continuous quality improvement of diabetes care**
G. Russo, P. Di Bartolo, G. Di Cianni, R. Candido, G. Lucisano, V. Manicardi, A. Nicolucci, A. Rocca, M. Rossi, AMD Annals Study Group, Italy

**280 Temporal trends in the achievement of treatment targets among men and women with type 1 and type 2 diabetes in Sweden**
S. Karayiannides, S.-B. Catrina, N. Rajamand-Ekberg, Sweden
European elections 2024: the role of EUDF and the diabetes community in raising diabetes on the policy agenda

Chair: Stefano Del Prato, Italy
Speaker: Stefano Del Prato, Italy
Welcome and opening remarks, raising diabetes on the European policy agenda

Niti Pall, UK:
What are we asking for? Diabetes Manifesto for the European Elections

Bart Torbeyns, Belgium:
How can you support the diabetes election campaign? Toolkit for countries
12:00 - 13:00
Hamburg Hall

**OP 50  Fatty liver, faulty liver**

*Chair:* B. Ludvik, Austria, K. Roumans, Netherlands

**281 Mildly elevated liver fat content is characterised by central insulin resistance: evidence from a positron emission tomography study**

**282 Elucidation of hepatic insulin resistance by species-specific analysis of diacylglycerols**
M. Piribauer, S. Trenkamp, B.-F. Belgardt, M. Rieck, H. Al-Hasani, M. Roden, G. Heilmann, Germany

**283 Impact of 4-week carbohydrate overfeeding on postprandial nutrient metabolism in low birth weight versus normal birthweight men**
L.M. Engelhard, L.O. Elingaard-Larsen, L. Justesen, T. Hansen, G.V. Hall, A. Vaag, C. Brøns, Denmark, Sweden

**284 Genome-wide CRISPR screening to identify regulators of hepatic insulin signalling**
12:00 - 13:00  London Hall

**OP 51** "With a little help from my friends": therapies and combinations

*Chair: J. Eriksson, Sweden, N. Rajamand Ekberg, Sweden*

285 Efficacy of initial triple combination therapy with metformin, dapagliflozin and saxagliptin in drug-naïve patients with type 2 diabetes: a randomised controlled trial

287 Effect of orfoglipron versus placebo and dulaglutide on glycaemic control and body weight in patients with type 2 diabetes
K.J. Mather, J.P. Frias, S. Hsia, S. Eyde, R. Liu, X. Ma, M. Konig, C. Kazda, E. Pratt, A. Haupt, D. Robins, USA

288 The gut hormone GIP contributes to the postprandial gastrointestinal hyperaemia in humans
L.S. Gasbjerg, R.S. Rasmussen, L.S. Langberg, F. Østergaard, M.B. Vestergaard, A. Asmar, B. Hartmann, J.J. Holst, B. Haddock, H.B. Larsson, U.B. Andersen*, M.M. Rosenkilde*, Denmark
12:00 - 13:00  
Paris Hall

**OP 52  Looking to the future: risks and benefits of glycaemic control in diabetic retinopathy**

*Chair:* E. Bezerra Parente, Finland, E. Mensah, UK

289 Clinical benefit vs risk of diabetic retinopathy progression with semaglutide: watch the eyes  
M. Jose, L. Varadhan, UK

290 Effects of semaglutide, empagliflozin or their combination on oxygenation, vascular autoregulation, and central thickness of the retina in persons with type 2 diabetes  
P. Løgstrup, Denmark

291 Does glycaemic variability impact on the onset of sight threatening diabetic retinopathy in multi-ethnic cohort of people with type 1 diabetes?  
A. Muthukumar, T. Mangelis, S. Ayis, A. Goubar, S. Thomas, P. Vas, S. Mann, L. Webster, J. Karalliedde, UK

292 Blood glucose derived GMI and HbA$_1c$ have similar associations with retinopathy progression: further analysis of the Diabetes Control and Complications Trial (DCCT)  
I.B. Hirsch, Y. Xu, T.C. Dunn, Y. Dabiri, Y. Ram, R. Aijan, R.M. Bergenstal, USA, UK
12:00 - 13:00

Barcelona Hall

**OP 53 Elevating and (making) exciting diabetes education**

*Chair:* A. Majchrzak, Poland, F. Toti, Albania

293 Relationship between education and non-alcoholic fatty liver disease: a two-sample Mendelian randomisation analysis
Z. Ren, A. Wesselius, C.D. Stehouwer, M.C. Brouwers, Netherlands

294 The effect of education on glycaemic control in patients with type 1 diabetes with initiation of continual or flash glucose monitoring
E. Horová, V. Navrátilová, J. Šoupal, J. Škrha jr, D.Q. Do, L. Radovnická, A. Hásková, M. Prázný, Czech Republic

295 My diabetes my way: online support for diabetes self-management
S.G. Cunningham, B. Allardice, J. Dickson, N.T. Conway, D. Little, D.J. Wake, UK

296 Development of noninvasive diabetes management method using glycated albumin in tears
M. Aihara, N. Kubota, T. Yamauchi, Japan
12:00 - 13:00

**Mumbai Hall**

**OP 54  Risk factors for complications and mortality**

*Chair:* M. Jorgensen, Greenland, A. Rawshani, Sweden

**297 Metabolomic biomarker profiling for chronic kidney disease prediction in 10,000 individuals with type 2 diabetes**
P. Würtz, J. Barrett, H. Julkunen, Finland

**298 Infection risk is substantially increased in a hyperinsulinaemic type 2 diabetes subgroup: a Danish cohort study**

**299 Risk of long term mortality in patients with recurrent diabetic ketoacidosis admissions**
S. Penswick, M. Lyall, F. Gibb, UK

**300 Large and small peripheral artery disease in people with type 1 diabetes**
12:00 - 13:00  

**Lima Hall**

**OP 55  How the beta cells die and can be rescued**

*Chair:* T. Mezza, Italy, M. Raoux, France

**301 A 3D imaging toolbox for islet biology: utilisation of human islet microtissues in high-content 3D confocal microscopy**

M. Karsai, A. Title, S. Jawurek, C. Rufer, F. Forschler, J. Mir Coll, S. Sonntag, O. Yavas, B. Yesildag, Switzerland

**302 OGT is essential for postnatal beta cell identity maintenance through transcription factor Pdx1**

A. Wong, E. Alejandro, USA

**303 Mesenchymal stromal cell secretory peptides improve human islet functional survival**

T. Hong, S. Caxaria, M. Zhao, L. Daniels Gatward, A. King, C. Rackham, P. Jones, UK

**304 UFMylation in pancreatic beta cells plays an important role in maintaining cellular homeostasis and glucose tolerance**

Y. Nishida, H. Uzawa, A. Kanai, K. Ueki, M. Komatsu, H. Watada, Japan
12:00 - 13:00 Cairo Hall

**OP 56 The brain in control**

*Chair:* B. Ukropcova, Slovakia, H. Le Stunff, France

- **305 Hypothalamic FSTL1 modulates energy homeostasis and glucose/lipid metabolism via the Akt-/Foxo1-AgRP pathway**
  H. Dai, M. Yang, L. Li, G. Yang, China

- **306 Effects of triglycerides enriched at the sn-2 position in saturated fatty acids on peripheral and central insulin resistance: role of ceramide metabolism**
  H. Le Stunff, J.E. Miyamoto, R. Magno, J. Guittton, A. Reginator, M.A. Torsoni, A. Torsoni, L. Souza, M. Taouis, C. Magnan, M. Milanski, France, Brazil

- **307 Reversion of obesity and insulin resistance by intracerebrospinal fluid AAV-FGF21 gene therapy**
  I. Elias, I. Grass, V. Sacristán, A. Ribera, C. Jambrina, V. Sánchez, V. Jiménez, E. Casaña, T. Ferré, F. Bosch, Spain

- **308 Gpr75 knockout mice are protected against diet-induced obesity via reduced food intake and increased energy expenditure, independent of non-shivering thermogenesis**
12:15 - 12:45  

**Spotlight Stage**

The SARS-CoV-2 virus is directly responsible for the increased incidence of type 1 diabetes during the early COVID-19 pandemic

*Chair:* TBA  
*Speaker:* TBA:  
**In favour**

Mikael Knip Finland:  
**Against**
13:30 - 15:00  
Hamburg Hall

Hyperglycaemic crises in adult patients with diabetes consensus report

Chair: TBA
Speaker: TBA

13:30 - 15:00  
London Hall

EASD/ADA Symposium

Chair: TBA
Speaker: TBA

13:30 - 15:00  
Paris Hall

Facing the unexpected: how to fight diabetes while fighting the war or disaster

Chair: Andrew JM Boulton, UK
Speaker: Boris Mankovsky, Ukraine:
   …in Europe

   Butheinah A Al-Sharafi, Yemen:
   …in South-West Asia

   Brij M Makkar, India:
   …in South-East Asia
13:30 - 15:00 Barcelona Hall

Diabetic neuropathy from genetics to clinical practice

Chair: Prashant RJ Vas, UK
Speaker: Hetal Shah, USA: Genetics of diabetic neuropathy

Troels S Jensen, Denmark: Diagnosis of neuropathy: Who, what, when, where, why?

Dinesh Selvarajah, UK: Treatment of diabetic neuropathy: What can we do better?

13:30 - 15:00 Mumbai Hall

The old and the new risk factors for diabetic kidney disease

Chair: Niina Sandholm, Finland
Speaker: Bruce A Perkins, Canada: eGFR: Is it more than an equation? Role of trajectories in predicting outcomes

Parker C Wilson, USA: Single-cell sequencing for diabetic kidney disease

Joanne B Cole, USA: Genetics of diabetic kidney disease
13:30 - 15:00 Lima Hall

Brain control of islet function

Chair: Hideli Katagiri, Japan

Speaker:
- Rory J McCrimmon, UK: Central deficiency of IL-6Ra in mice impairs glucose-stimulated insulin secretion
- Sushil G Rane, USA: A distinct hypothalamus-to-beta cell circuit modulates insulin secretion
- Peter Thorn, Australia: Local activation of focal adhesion kinase orchestrates the positioning of presynaptic scaffold proteins and Ca2+ signalling to control glucose-dependent

13:30 - 15:00 Cairo Hall

Cognition and related conditions in diabetes

Chair: Miriam Cnop, Belgium

Speaker:
- Thomas T van Sloten, Netherlands: Diabetes related conditions and dementia: a lifespan perspective
- Jose A Luchsinger, USA: Noninvasive blood-based biomarkers of neuropathology in people with diabetes
- Jørgen Rungby, Denmark: Neuroprotective mechanisms from antidiabetic agents
Short Oral Discussion Event A  Tuesday, 12:30 - 13:30

SO 01  Weight across the lifespan

Chair:  N. Esser, Belgium

309 Impact of birthweight on macrovascular complications in type 2 diabetes: a cohort study

310 Associations of infant feeding patterns with adiposity in childhood: the Healthy Start study

311 Asian population-based visceral adiposity indices outperform western population-based those as indicators of CKD in a Korean population
H. Kim, J. Jin, B. Ha, N. Kim, K.-G. Park, Republic of Korea

312 Metabolic syndrome in people living with type 1 diabetes in Belgium
A. Lavens, P. Oriot, J.-C. Philips, A. Verhaegen, C. De Block, F. Nobels, C. Mathieu, on behalf of the IQED Group of Experts, Belgium

313 Prevalence of obesity in people living with type 1 diabetes across countries: an IMI2 SOPHIA analysis of data from Belgium, Kuwait, and Mexico

314 Effect of body weight on glycaemic indices in patients with type 1 diabetes using continuous glucose monitoring
S. Tigas, P. Christou, G. Markozannes, A. Siolos, D. Katsarou, E. Georga, D. Fotiadis, M. Christou, Greece

315 Association of body composition with glucose metrics in patients hospitalised with community-aquired pneumonia
316 Body mass index history and mortality among persons with recently diagnosed type 2 diabetes

Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 02  Lifestyle matters
Chair:  P.L.D. Ruiz, Norway

317 Cardiorespiratory fitness, obesity, diabetes and longevity: a two-sample Mendelian randomisation study
A.D. Kjaergaard, C. Ellervik, N. Jessen, S.J. Lessard, Denmark, USA

318 The effect of preprandial versus postprandial physical activity on glycaemia: systematic review and meta-analysis of human intervention studies

319 Occupational physical activity and sedentary behaviour, and 10-year incidence of type 2 diabetes: a population-based cohort study

320 Does better cardiorespiratory fitness increase the chance of a partial clinical remission among adults with type 1 diabetes?

321 Updated cardiovascular health metrics adding sleep health and incident diabetes and cardiovascular events in older adults with prediabetes
S. Han, K. Ha, D. Kim, J. Jeon, K.-W. Lee, Republic of Korea

322 Metabolic profiling of smoking, associations with type 2 diabetes and interaction with genetic susceptibility
Y. Wei, S. Carlsson, Sweden
323 Lifestyle profiles are linked to gut microbiota for different cardiometabolic profiles in the MetaCardis study
S. Adriouch, E. Belda, E. Prifti, J.-D. Zucker, K. Clément, France

324 Is the association between social jetlag and BMI mediated by lifestyle? A cross-sectional survey study in the general population
E.J. Bouman, J.D. Mackenbach, L. Raimondo, J.W. Beulens, P.J. Elders, F. Rutters, Netherlands

**Short Oral Discussion Event C Wednesday, 12:45 - 13:45**

**SO 03 From single nutrients to dietary patterns**

*Chair:* TBA

325 Circulating short-chain fatty acids and Mediterranean food patterns: a potential role for the prediction of type 2 diabetes risk
G. Llaurado, J. Badia, G. Rojo-Martínez, O. Yanes, X. Correig, D. Mauricio, S. Fernández-Veledo, J. Vendrell, Spain

326 Effects of a high-protein-high-UFA intervention in glucose metabolism and type 2 diabetes in adults aged 50-80y: the NutriAct multicentre randomised trial

327 The mediating role of BMI and waist circumference on the prospective association between urinary sucrose and incidence of diabetes in a sub-cohort of the EPIC-Norfolk
A. Lang, O. Kuss, T. Filla, G. Kuhnle, S. Schlesinger, Germany, UK

328 Do measures of overall and regional obesity modify dietary diversity effects on type 2 diabetes? Findings from the EPIC-InterAct case-cohort study
H. Mozaffari, F. Imamura, R. Murphy, M. Mahsa Jessri, N. Wareham, A. Conklin, Canada, UK

329 Tea consumption is associated with increased urinary glucose excretion, improved insulin resistance and reduced risk of dysglycaemia, in Chinese community-dwelling adults
T. Li, M. Sang, J. Wang, Z. Sun, C. Xie, C. Rayner, M. Horowitz, S. Qiu, T. Wu, Australia, China
330 Dietary patterns and cancer outcomes in individuals with type 2 diabetes: a systematic review and meta-analysis of prospective studies
J. Barbaresko, A. Lang, T. Schiemann, E. Szczerba, L. Schwingshackl, M. Neuenschwander, S. Schlesinger, Germany

331 Substitution of animal-based with plant-based foods and risk of type 2 diabetes: a systematic review and meta-analysis

332 Intakes or circulating levels of beta-carotene, vitamin C, and vitamin E and risk of type 2 diabetes: a systematic review and meta-analysis
A.-M. Lampousi, T. Lundberg, J.E. Löfvenborg, S. Carlsson, Sweden

Short Oral Discussion Event D   Wednesday, 14:00 - 15:00

SO 04  Viruses and infections
Chair: M. Knip, Finland

333 SARS-CoV-2 infection in people with type 1 diabetes and hospital admission: an analysis of risk factors for England
R. Williams, J.J. Warner-Levy, B. Ollier, J.M. Gibson, A.H. Heald, UK

334 Rates of SARS-CoV-2 infection or severe COVID-19 in persons with diabetes after initial and booster COVID-19 vaccination in the Netherlands

335 Pioglitazone for patients with type 2 diabetes admitted with COVID-19 infection

336 Nonstructural protein 1 from SARS-CoV2 inhibits insulin granule biosynthesis and beta cell function
K.-P. Knoch, A. Sönmez, K. Ganss, C. Wegbrod, F. Fakir, M. Solimena, Germany
337 Pancreatic dysregulation of innate antiviral immune pathways in type 1 diabetes
M. Høj Jensen, K. Pedersen, S. Kaur, A. Jensen-Dahm, F. Pociot, M. Haupt-Jorgensen, Denmark

338 Infectious disease and the risk of latent autoimmune diabetes in adults and type 2 diabetes
J. Edstorp, M. Rossides, E. Ahlqvist, L. Alfredsson, B. Rasouli, T. Tuomi, S. Carlsson, Sweden, Finland

339 Increased gingival crevicular fluid extracellular vesicles are involved in the crosstalk between periodontitis and gestational diabetes
M.L. Mizgier, O. Realini, M.J. Bendek, S. Monje, A. Figari, V. Ramirez, M. Hernandez, A. Chaparro, Chile

**Short Oral Discussion Event E**  Thursday, 12:45 - 13:45

**SO 05  Autoimmunity in diabetes**

*Chair:*  T. Rodriguez-Calvo, Germany

340 Type 1 diabetes exchange online registry: characteristics of diabetes management among over 14,500 individuals with type 1 diabetes
K.M. Miller, H. Nguyen, M.E. Peter, C.S. Kelly, D. Finan, W.A. Wolf, USA

341 Screening for paediatric type 1 diabetes: a qualitative exploration of parent and stakeholder views [ELSA 1 Study]

342 Association of GADA-positivity with beta cell function in individuals without diabetes in Botnia Prospective and PPP-Botnia studies
L. Hakaste, M. Lehtovirta, O.P. Dwivedi, K. Lahti, T. Tuomi, Finland

343 Implementation of genetic risk score for type 1 diabetes in children with newly diagnosed diabetes
344 Islet autoimmunity and progression to type 1 diabetes in children with and without an affected first-degree relative in the Finnish DIPP study

345 Heterogeneity of human islet-derived extracellular vesicles and their roles in the cross-talk between beta cells and immune cells during type 1 diabetes pathogenesis

346 Study of genetic association of HLA-B alleles (HLA-B*39:06, HLA-B*39:01, HLA-B*38:01) differentially associated with type 1 diabetes
A.W. Amarajeewa, A. Ozcan, A. Mukhtiar, W. Qianyu, R. Xu, P. Ozbek, M.A. Garstka, O. Sercinoglu, China, Turkey

347 Descriptive analysis of solid organ transplants among individuals with type 1 diabetes in the United States
M. Wijkstrom, K. Hagan, L. Titievsky, K. Chandarana, B. Bruinsma, C. Vick, A. Joyce, J. Snyder, USA

Short Oral Discussion Event F Thursday, 14:00 - 15:00

SO 06 Diagnosis and prediction
Chair: W. Rathmann, Germany

348 Differences in glucose concentrations from whole blood and sodium-fluoride citrate plasma impact on assessment of diabetes prevalence
G. Heilmann, S. Trenkamp, I. Yurchenko, K. Strassburger, M.M. Rodríguez, C. Möser, M. Bombrich, M. Schön, O.P. Zaharia, V. Burkart, R. Wagner, M. Roden, Germany, Spain

349 Incidence trend of type 2 diabetes in Germany from 2012 to 2021
C.T. Lehner, M. Eberl, E. Donnachie, L.F. Tanaka, G. Schauberger, F. Schederecker, S.J. Klug, Germany
350 Implementation of diabetes screening recommendations in adults over 40 years of age in the Czech Republic during 2014 and 2019: a cross-sectional study
J. Urbanová, M. Lustigová, A. Frůhaufová, P. Krollová, P. Kankanala, K. Jahrami, J. Brož, Czech Republic

351 Differences in screening-detected type 2 diabetes: evidence from two campaign setups in Denmark
T. Thybo, N. Cayuelas i Mateu, Denmark

352 Diagnosing diabetes and assessing its prevalence in individuals attending A&E in an acute hospital in England
E. Jude, S. Anderson, A. Heald, UK, Barbados

353 Predicting 5-year risk of type 2 diabetes in New Zealand primary care patients using primary care and national routinely collected data: PREDICT cohort study
R. Pylypchuk, V. Selak, S. Wells, K. Poppe, R. Jackson, New Zealand

354 Validation of existing non-invasive diabetes risk models to predict incident diabetes risk in a Swedish cohort: Västerbotten Intervention Programme
M.C. Fortuin-de Smidt, O. Rolandsson, S.J. Griffin, P. Wennberg, Sweden, UK

355 Risk factors for new onset diabetes after transplant (NODAT) and one year outcome in NODAT and diabetic kidney disease patients undergoing renal transplant
D. Sanyal, P. Das, India

Short Oral Discussion Event A, Tuesday, 12:30 - 13:30

SO 07 Mechanistic insights

Chair: M. Rovira, Spain

356 Role of ACSL1 in pancreatic beta cell function and the pathogenesis of type 2 diabetes
357 Small-RNA seq profiling reveals a signature of beta cell enriched isomiRs and its possible involvement in the progression from normal glucose tolerance to type 2 diabetes
S. Auddino, E. Aiello, G.E. Grieco, G. Di Giuseppe, G. Ciccarelli, M. Brunetti, R. Bizzotto, A. Mari, A. Giaccari, F. Dotta, T. Mezza, G. Sebastiani, Italy

358 Severe endogenous insulin deficiency is rare in long standing type 2 diabetes and usually reflects misclassified autoimmune aetiology diabetes
S. Chakka, N.J. Thomas, D. Fraser, A. Hattersley, K. Patel, A.G. Jones, UK

359 XBP1 expression in pancreatic islet cells is associated with poor glycaemic control especially in young non-obese onset diabetes across diverse ancestries

360 MiRNAs as in-situ and circulating biomarkers of beta cell glucose sensitivity and functional impairment in the progression of type 2 diabetes

361 An AAV8-Ins1Cre mediated reduction of insulin gene dosage in young adult NOD mice
N.S. Nahirney, P. Overby, K. Chan, Y.-C. Chen, B. Verchere, J.D. Johnson, Canada

362 Knock-out of the neutral amino acid transporter gene Slc6a19 prevents diet-induced diabetes in male NOD\textsuperscript{k} mice
M. Shamoon, J.E. Dahlstrom, C.J. Nolan, Australia

363 SGLT1 functional polymorphisms are associated with 1h OGTT glucose levels
G.C. Mannino, A. Palummo, C. Averta, M. Melina, E. Mancuso, A. Sciacqua, V. Fiorentino, E. Succurro, F. Andreozzi, G. Sesti, Italy
Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 08  Coming from the heart

Chair: M. Rizzo, Italy

364 Presenting symptoms and comorbidities in type 2 diabetes patients at their first visit in a tertiary care centre in Eastern Nepal
U. Mainali, D. Sigdel, R. Sharma, K. Koirala, Nepal

365 Increased interleukin-6 is associated with higher risk of heart failure in people with type 2 diabetes: the hoorn diabetes care system cohort

366 Natriuretic peptide-based screening for heart failure among adults with diabetes: a multicentre US experience
S. Chatur, T. Meng, A. John, G. Bobba, M. Vaduganathan, USA, Switzerland

367 Composite macrovascular risk and its association with HbA1c in individuals with an without cardiovascular disease: a large UK observational cohort study
T.S. Crabtree, R. Aldafas, Y. Vinogradova, J. Gordon, I. Idris, UK

368 Age-dependent association of NT-proBNP with obesity, insulin resistance, and inflammation in type 2 diabetes: a cross-sectional study in the DD2 cohort
T. Olesen, J.V. Stidsen, S.L. Domazet, J.S. Nielsen, K. Højlund, A.L. Hansen, F.P. KKirstensen, P. Vestergaard, M.H. Olsen, Denmark

369 Type 2 diabetes, glycaemic indexes, and cerebral small vessel disease: genetic overlap, causal relationship and drug targets
K.-J. Lee, J. Lee, S. Lee, H.-J. Bae, J. Sung, Republic of Korea

370 Investigating long-term complications of gestational diabetes using real-world data
G. Goldet, F. Tam, A. Frankel, Z. Ul-Haq, R. Dattani, T. Kamalati, UK

371 Prediction of mortality and validation of the ATC-code based Rx-risk comorbidity index in the “Outcomes & Multi-Morbidity In Type 2 diabetes” (OMIT) cohort
Short Oral Discussion Event C  Wednesday, 12:45 - 13:45

SO 09  Novel risk factors and treatments

Chair:  TBA

372 Incidence of type 2 diabetes with verapamil treatment compared with other calcium channel blockers
J.W. Sacre, J.M. Wentworth, D.J. Magliano, J.E. Shaw, Australia

373 Two population-based studies showed that several environmental contaminants were related to diabetes
M. Lind, L. Dunder, L. Lind, S. Salihovic, Sweden

374 Association of serum and urinary ionome with dysglycaemia and diabetic complications
Z. Sun, M. Sang, P. Wang, S. Qiu, T. Wu, D. Wang, F. Wang, Y. Gu, China, Australia, UK

375 Estradiol and estrone levels are associated with prevalent diabetes in postmenopausal women: a cross sectional study in a Swedish cohort
K. Ottarsdottir, M. Hellgren, U. Lindblad, C. Ohlsson, B. Daka, Sweden

376 Associations of transportation noise and nighttime temperature with the metabolome of the Dutch adult population: a cross-sectional study

377 Perceived stress and insulin resistance in a population study in Southwestern Sweden
G. Szalo, M. Eriksson, M. Hellgren, U. Lindblad, B. Daka, Sweden

378 Metabolic modelling reveals a switch in the metabolic exchange of the gut microbiome of patients with diabetes
S. Alban, C. Kaleta, Perfood GmbH, Germany

379 Human fecal microbiome transplantation does not alter diabetes incidence in NOD mice
Short Oral Discussion Event D  Wednesday, 14:00 - 15:00

SO 10  Body and brain

Chair:  D. Witte, Denmark

380 Inequity in type 2 diabetes management in New Zealand: clinical targets and prescribing

381 Impact of diabetes on physical functioning and musculoskeletal pain in persons who are close to retirement age
S. Molsted, J. Hansen, C.J. Nilsson, O. Ekholm, H. Hansen, Denmark

382 Fracture patterns in type 1 diabetes and their associated risk factors: a retrospective cohort study
N.H. Rasmussen, J. H.M. Driessen, A. Vestergaard Kvist, M. Brodersen, L. Rosengren Kaldahl, I. Leegaard, P. C. Souverein, J. Van den Bergh, P. Vestergaard, Denmark, Netherlands

383 Nephropathy in south Asians with diabetes compared to Europeans: higher risk and faster progression. Results from The HinDu The Hague Diabetes Study
P.H. Duijvestijn, J. Van Niel, N.A. Traa, J.M. Kist, M.E. Numans, R.C. Vos, Netherlands

384 Trajectories of cognitive decline in Chinese middle-aged and older adults with diabetes: a nationally representative longitudinal study
S. Chen, China

385 Psychometric properties and implementation of seven PROMIS computerised adaptive tests in people with type 2 diabetes
F. Rutters, L. Groeneveld, P. Elders, M. Blom, J. Beulens, C. Terwee, Netherlands

386 The association of dietary total, animal, and plant-based protein intake with depressive symptoms in Dutch adults with type 2 diabetes: the Hoorn Diabetes Care System cohort
387 Autonomic Nervous System (ANS) controls glucose regulation in type 2 diabetes by homeostasis: a randomised controlled trial using pain sensitivity as a measure of ANS
J. Faber, S. Ballegaard, N. Oersted, E. Eldrup, B. Karpatschof, F. Gyntelberg, S.K. Hecquet, B. Bibby, A. Gjedde, Denmark

Short Oral Discussion Event E Thursday, 12:45 - 13:45

SO 11 Obesity and prediabetes

Chair: A. Hulman, Denmark

388 Trends in drugs for diabetes and obesity 2004-2021 in Norway
P.L. Ruiz, K. Nøkleby, Ø. Karlstad, H.L. Gulseth, K. Sveen, E. Qvigstad, K. Furu, Norway

389 The effect of breastfeeding on weight and the risk of prediabetes and type 2 diabetes one year after birth in women with gestational diabetes

390 Effect of early versus late time-restricted eating on inter-day glycaemic variability, measured by continuous glucose monitoring, in adults at risk for type 2 diabetes
A.H. Heald, J.J. Warner-Levy, K.A. Davies, UK

391 Effects of TM6SF2 rs58542926 polymorphism on liver triglycerides and insulin resistance in early type 2 diabetes

392 Saliva dyslipidaemia in young type 1 diabetes patients
M. Haupt-Jorgensen, K. Pedersen, N. Tom, M. Bilgin, A.M. Pedersen, Denmark

393 Engineering of functionally active human myotubes and myobundles in vitro
Short Oral Discussion Event F    Thursday, 14:00 - 15:00

SO 12 Epigenetics

Chair:    S. Misra, UK

394 Histone epigenetic signature and gestational diabetes: role of the acetyltransferase p300 in the transmission of the maternal phenotype to the offspring

395 Differences in DNA methylation in genes involved in vitamin D metabolism are related with insulin requirement in pregnant women with gestational diabetes

396 Placental microRNAs in pregestational diabetes: effects on offspring and functional study
C. Valverde Tercedor, A. Ibarra, N. Perdomo Ugarte, V. Dávila Batista, Y. Novoa Medina, Y. García Delgado, L. Hernandez-Baraza, R. Jiménez Monzón, M. Barreiro Bautista, A. González LLeó, Y. Brito Casillas, B. Vega Guedes, A. Wägner, Spain

397 Epigenome wide association study identifies CpGs associated with the growth pattern in offspring from mothers with gestational diabetes

398 Obesity associated epigenetic reprogramming of leptin enhancer elements in large adipocytes
N. Taege, S.C. Schriever, C. Geißler, H. Kirchner, Germany

399 Is epigenetic editing a way to a more personalised treatment approach in type 2 diabetes?
### Short Oral Discussion Event A  
**Tuesday, 12:30 - 13:30**

**SO 13  ** Monogenic diabetes  

Chair:  T. Tuomi, Finland

1. **402 Mapping the impact of high fat diet challenge in a HNF1A-MODY mouse model**  
   S. Sharmine, T.A. Legøy, A.F. Mathisen, L. Ghila, S. Chera, Norway

2. **403 The Welander distal myopathy TIA1 mutation promotes a proinsulin to insulin processing defect in human insulin producing EndoC-betaH1 cells**  
   T. Zhao, X. Wang, J. Cen, A. Ngamjariyawat, Å. Sjöholm, N. Welsh, Sweden

3. **404 Deep mutational scanning of the insulin receptor ectodomain to facilitate genetic diagnosis and translational studies of insulin receptoropathy**  
   V. Aslanzadeh, G. Brierley, G. Kudla, R.K. Semple, UK

4. **405 In vitro differentiation of ZNF808 knockout human embryonic stem cells reveals impaired pancreatic lineage specification**  

5. **406 Disease modelling MODY5 in zebrafish to investigate mechanisms for pancreas development**  
   E. Mchaina, E. Denker, R. Hoff, O.V. Fløtre, L.B. Gundersen, S. Ellingsen, Norway

6. **407 Identification of PAM as a novel monogenic diabetes gene**  
408 Rare missense and protein truncating variants in NEUROD1 and PDX1, but not APPL1, cause MODY with reduced penetrance

409 Developing a MODY calculator for use at time of diagnosis in the paediatric population

Short Oral Discussion Event B Tuesday, 13:45 - 14:45

SO 14 Heterogeneity of diabetes
Chair: R. Wagner, Germany

410 Characterising diabetes in Kazakhstan: a cluster analysis
B. Taurbekova, R. Sarsenov, S. Fazli, K. Atageldiyeva, S. Zhumambayeva, A. Sarria-Santamera, Kazakhstan

411 Diabetes classification models have high performance when prospectively validated in adults with new onset diabetes

412 Heterogeneity of temporal trajectories for the main functional parameters of glucose metabolism in non-diabetic individuals: an IMI DIRECT study
R. Bizzotto, E.R. Pearson, A. Mari, for the IMI DIRECT Consortium, Italy, UK

413 Longitudinal HbA1c patterns before first treatment of diabetes in routine clinical care: a latent class trajectory analysis
S.K. Nicolaisen, S. Le Cessie, R.W. Thomsen, D.R. Witte, O.M. Dekkers, H.T. Sørensen, L. Pedersen, Denmark, Netherlands

414 Cardio-metabolic risk stratification by meal response profiles: paving the way towards to personalised nutrition

415 Subphenotype-dependent benefits from bariatric surgery of individuals at risk for type 2 diabetes
L. Sandforth, E. Lembo, O. Verrastro, A. Sandforth, K. Zhou, R. Archid, R. Wagner, L. Fritsche, A. Fritsche, R. Jumpertz-von Schwartzzenberg, G. Mingrone, A. Birkenfeld, Germany, Italy
416 Algorithms to define diabetes type using data from electronic health records and administrative databases: a systematic review of the evidence
S. Sajjadi, J.W. Sacre, L. Chen, S. Wild, J.E. Shaw, D.J. Magliano, Australia, UK

417 C peptide testing and reclassification of type of diabetes in adults: the outcome of a pilot study
A. Tabasum, C. Evans, C. Dayan, UK

Short Oral Discussion Event C  Wednesday, 12:45 - 13:45

SO 15  Transcriptional regulation in islet cells
Chair:  F. Cinti, Italy

418 A small molecule screen for regulators of Ins2 gene activity dynamics
J. Chu, X. Hu, W. Sun, J. Johnson, Canada

419 Novel interaction between Nkx6.1 and Pdx1 is needed for proper beta cell function
J.S. Tessem, C.C. Littlefield, J.T. Hill, J.C. Price, USA

420 Islet maturation and ageing is governed by the Hnf1a transcription factor
A.F. Mathisen, T.A. Legoy, U. Larsen, L. Ghila, S. Chera, Norway

421 Effect of mitochondrial fission in glucagon secretion after long term free fatty acids treatment
Q. Wen, N. Afrin, A. Fatallah, A.I. Chowdhury, P. Bergsten, Sweden

422 Cholinergic modulation of pancreatic hormone secretion is dependent on vagus nerve anatomical integrity
C.B. Lobato, J.J. Holst, Denmark

423 Decoding pancreatic endocrine cell differentiation and beta cell regeneration in Zebrafish
O. Andersson, J. Mi, K.-C. Liu, Sweden

424 Mechanism of beta cell failure in diabetes and the associated single-cell gene expression change
N. Sinha, V.A. Salunkhe, S. Hua, A.H. Rosengren, Sweden
**Short Oral Discussion Event D**  
**Wednesday, 14:00 - 15:00**

**SO 16  Different approaches to study hormone secretion regulation**

*Chair:* B. Merino Antolin, Spain

**425 Islets-on-microfluidic chips to monitor their electrical activity and hormone secretion**  
M. Lallouet, M. Monchablon, E. Puginier, T. Sawatani, S. Renaud, M. Cnop, M. Raoux, J. Lang, France, Belgium

**426 Microfluidic muscle-islet-on-chip for functional investigations in diabetology**  
D. Chapeau, M. Monchablon, E. Papasavva, F. Bouvet, A. Milochau, A. Pirog, P. Scotti, J. Lang, S. Renaud, A. Bouter, M. Raoux, France

**427 IDE deficiency leads to the preferential accumulation of older insulin secretory granules**  
L.-M. Kretschmar, K.-P. Knoch, O. Topcheva, M. Neukam, A. Sönmez, K. Ganß, C. Münster, A. Müller, P. Van Endert, M. Solimena, Germany, USA, France

**428 Impact of pancreatic PCSK9 on intracellular organelles distribution and dynamics in beta cells: implication in insulin processing and secretion**  
C. Perego, A. Galli, N. Dule, L. Da Dalt, G. Finzi, S. La Rosa, G.D. Norata, Italy

**429 Effects of a bitter tasting substance, denatonium benzoate, on pancreatic hormone secretion**  
C.K. Rayner, W. Huang, S.E. O’Hara, C. Xie, L.M. Nicholas, T. Wu, Australia

**430 Pleiotrophin: a new player in the morphology and functioning of the pancreas**  

**431 A novel actin filament remodelling protein regulating beta cell function**  
L. Martin Diaz, M. Patrikainen, R. Parveen, V. Chandra, J. Saarimäki, J. Laiho, H. Hyöty, T. Otonkoski, K. Viiri, Finland
Short Oral Discussion Event E  Thursday, 12:45 - 13:45

SO 17  Modulators of beta cell signal transduction: How do they work?

Chair:  M. Fex, Sweden

432 Identification and validation of eIF2A binding partners and effectors involved in beta cell resilience
J.A. Zhang, A. Rahardjo, E. Panzhinskiy, E. Jan, J.D. Johnson, Canada

433 Glycine and β-alanine promote pancreatic islet cell proliferation via activation of PI3K/mTORC1/p70S6K pathway

434 Glucose distinctly affects cytosolic and mitochondrial NADH and NADPH in rodent beta cells: implications for the stimulation of insulin secretion
Y. Hajj Hassan, C. Vandrisse, M. Tariq, J.-C. Jonas, Belgium

435 Apolipoprotein A-I (ApoA-I) primes beta cells to increase insulin secretion via scarb1 and abca1 receptor pathways upregulating mitochondrial metabolism
E. Cowan, C.L. Lyons, L. Eliasson, J.O. Lagerstedt, Sweden, Denmark

436 DPP-IV inhibition improves pancreatic beta cell function by reducing Fetuin-A expression and intracellular lipid accumulation
S. Nag, S. Mandal, R. Kundu, India

437 Ca\(^{2+}\) inhibits GLP-1-induced cAMP formation in beta cells
Y. Hellman, H. Shuai, A. Tengholm, Sweden

438 The myokine irisin is endocytosed and signals through an αV integrin-independent mechanism in pancreatic beta cells
N. Marrano, A. Borrelli, G. Biondi, M. Rella, A. Cignarelli, S. Perrini, L. Laviola, F. Giorgino, A. Natalicchio, Italy
Short Oral Discussion Event F  Thursday, 14:00 - 15:00

SO 18  Role of immune cells in type 1 diabetes and type 2 diabetes

Chair: TBA

439 Cd226+Nk cell subsets are associated with progression and remission of type 1 diabetes
K. Lei, X. Li, T. Zhong, X. Li, R. Tang, China

440 Elevated IL-8 and myeloperoxidase levels in recent onset type 1 diabetes
G. Alhamar, S. Fallucca, S. Peralice, L. Valente, S. Briganti, S. Manfrini, P. Pozzilli, Italy

441 Identification of important shared and diverse immunophenotypes in type 1 diabetes, multiple sclerosis and systemic lupus erythematosus using automated cluster analysis by machine learning

442 Expression of autoimmune regulator in peripheral B lymphocytes correlates with remnant islet beta cell function in type 1 diabetes
Y. Liu, Y. Guo, W. Li, M. Xie, C. Fang, X. Wang, China

443 Clinical features associated with glutamic acid decarboxylase autoantibodies (GADA) in adults with type 2 diabetes

444 Glutamic acid decarboxylase autoantibodies (GADA) in type 2 diabetes predict long-term glycaemic control but not complications

445 Biological characterisation of circulating cell-free DNA in diabetes and prediabetes
Short Oral Discussion Event A  
Tuesday, 12:30 - 13:30

**SO 19  Transplantation of islet and stem cells today and tomorrow**

*Chair:* R. Strollo, Italy

446 Simultaneous evaluation of islet graft and pancreas beta cell mass following intraportal transplantation from the perspective of $^{111}$In-exendin-4 SPECT/CT

A. Botagarova, T. Murakami, H. Fujimoto, M. Fauzi, S. Kiyobayashi, D. Otani, N. Fujimoto, N. Inagaki, Japan

447 Interleukin (IL)-1α and IL-1β released from islet resident macrophages impair the success of islet transplantation

S. Wrublewsky, F. Pohlemann, L. Prates Roma, S. Rother, M. Menger, M. Laschke, E. Ampofo, Germany

448 Stem-cell derived islets for treating diabetes

W. Rust, P. Dalal, A. Koval, J. Ratiu, S. Southard, P. Strumph, C. Welsch, USA

449 Glucose-dependent insulin production and insulin-independence in patients with type 1 diabetes infused with stem cell-derived, fully differentiated islet cells (VX-880)


450 Mesenchymal stem cell-laden composite islet porous microgel for diabetes treatment

J. Sun, L. Li, China

451 Hydrogel encapsulation can protect functionality of transplanted islets in immunocompetent diabetic animals without immunosuppression

H. Stover, Canada

452 A vascularised artificial islet microcapsule based on microfluidic electrostatic spray for diabetes treatment

J. Li, L. Li, China

453 Transgenic porcine neonatal islets expressing human PD-L1 reduce immune cell activation and cellular rejection in humanised NSG mice with type 1 diabetes

Y. Lei, L. Wolf-van Buerck, M. Honarpisheh, Y. Zhang, R. Schwinzer, B. Petersen, J. Seissler, Germany
**Short Oral Discussion Event B**

**Tuesday, 13:45 - 14:45**

**SO 20  Roads leading to apoptosis in beta cells**

*Chair:* L.R. Cataldo, Denmark

454 **Catabolic pathways of S1P differentially regulate free fatty acid-induced oxidative stress, mitochondrial dysfunction and ceramide formation in beta cells**

Y. Tang, E. Gurgul-Convey, Germany

455 **Stimulation of NMDA receptors in islet cells increases oxidative stress by multiple mechanisms and activates Ca\(^{2+}\)-dependent K\(^+\) channels**

H. Noguera Hurtado, B. Wünsch, M. Düfer, Germany

456 **Palmitic acid enhances the damaging effects of increased insulin folding by accelerated ER stress and apoptosis**

S. Lortz, B. Vidrio-Huerta, T. Plötz, Germany

457 **Uncovering the secrets of beta cells: targeted ablation of cellular mass as a model of stress**

L.-M. Daian, G. Tanko, A. Vacaru, E. Lamba, O.-M. Mardare, A.-M. Vacaru, Romania

458 **Direct optical nanoscopy unveils signatures of cytokine-induced beta cell structural and functional stress**

F. Cardarelli, L. Pugliese, V. De Lorenzi, M. Bernardi, S. Ghignoli, M. Tesi, P. Marchetti, L. Pesce, Italy

459 **Cytokine-mediated autophagy disturbances are mediated by a dysfunctional S1P degradation in pancreatic beta cells**

E. Gurgul Convey, Y. Tang, M. Gräler, A. Jörns, Germany

460 **Activated pancreatic stellate cells induce pancreatic islet dysfunction in chronic pancreatitis**

X. Zhu, G. Li, L. Li, China

461 **Pancreatic stellate cells promote pancreatic beta cell death through exosomal microRNA transfer in hypoxia**

K.-H. Song, J.-S. Yun, E. Lee, S.-D. Moon, J.-H. Han, Y.-B. Ahn, Republic of Korea
**Short Oral Discussion Event C**  
*Wednesday, 12:45 - 13:45*

**SO 21  Protection of beta cells**

*Chair:*  
K. Bouzakri, France

462 Increased MANF expression in pancreatic beta cells protects from streptozotocin-induced beta cell death and diabetes in mice  
H. Li, T. Danilova, E. Palm, E. Pakarinen, J. Konovalova, T. Otonkoski, M. Lindahl, Finland

463 Small-molecule inhibitors of protein-protein interaction between TYK2 and IFNAR1 as a new strategy to prevent inflammation in early type 1 diabetes  
L. Marroqui, D. Guzmán-Llorens, A. Pérez-Serna, J.-A. Encinar, R.S. Dos Santos, Spain

464 Inhibition of mTOR prevents senescence induced by glucotoxicity in mouse islet cells without preserving their electrophysiological features  
T.J. Guzmán, C.M. Gurrola-Díaz, M. Düfer, Germany, Mexico

465 Identification of miRNAs able to protect beta cells from glucolipotoxicity using a high throughput screening approach  
S. Pinhancos, J.T. Oliveira, J. Santos, C. Alves, L. Ferreia, M. Gotthard, J. Jones, H. Fernandes, Portugal, Netherlands

466 The impact of glucose metabolism upon pancreatic beta cell autophagy is time dependent  
A. Williams, M. Georgiou, P.E. Lovat, C. Arden, UK

467 Ripk1 is dispensable for beta cell survival in diabetes  
Ö. Veli, X. Hildebrandt, P. Xiao, Y. Estornes, Ö. Kaya, M.J. Bertrand, A.K. Cardozo, N. Peltzer, Germany, Belgium

**Short Oral Discussion Event D**  
*Wednesday, 14:00 - 15:00*

**SO 22  Inflammation in type 1 diabetes**

*Chair:*  
TBA

468 Effect of chronic pancreatitis on beta cell function and glucose metabolism  
G. Ciccarelli, G. Di Giuseppe, L. Soldovieri, M. Brunetti, U. Capece, F. Cinti, S. Moffa, A. Mari, A. Giaccari, T. Mezza, Italy
469 Prohormones processing and exocrine markers in type 1 diabetes
Z.S. Mahmood, C. Dayan, S. Luzio, G. Dunseath, S. Wong, UK

470 Pilot study: non-invasive imaging of CD8+ T-cell infiltration during the development of type 1 diabetes in non-obese diabetic mice
S. Tokgöz, C. Friolink, S. Heskamp, P. Wierstra, I. Hagemans, M. Verdoes, M. Gotthardt, M. Boss, Netherlands

471 Assessing variation of beta cells heterogeneity during diabetes progression

472 Endoc-βH5: a highly functional human pancreatic beta cell that can model type 1 diabetes T-cell mediated beta cell killing

473 Endoc-βH5: a highly functional human pancreatic beta cell that can model glucolipotoxicity and inflammatory responses
B. Blanichi, M. Pilette, C. Cavanihac, M. Taurand, H. Olleik, France

Short Oral Discussion Event E Thursday, 12:45 - 13:45

SO 23 Drug interventions in diabetes and associated disease
Chair: TBA

474 Fall/fracture-related healthcare resource utilisation in people with type 2 diabetes receiving insulin glargine 300 U/mL vs long-acting basal insulin/NPH: Fragile study
J. Gill, G. Umpierrez, E. Pogge, X. Li, R. Preblick, N. Pandya, USA

475 Durable improvement in HbA1c in youth-onset type 2 diabetes with and without background insulin therapy: a post hoc analysis of the DINAMO trial of empagliflozin and linagliptin vs placebo
S. Willi, L.M. Laffel, T. Danne, W.V. Tamborlane, G.J. Klingensmith, D. Neubacher, I. Tartakovsky, J. Marquard, P. Zeitler, USA, Germany

476 ATGC-300, drug candidates for type 2 diabetes based on novel hybrid IgG fusion protein combined with GLP-1RA
477 Plasma levels of Liver-Expressed Antimicrobial Peptide 2 (LEAP2) decrease in response to weight loss and treatment with liraglutide and exercise

478 Empagliflozin improves insulin sensitivity in patients with a recent coronary syndrome and newly detected dysglycaemia
G. Ferrannini, E. Fortin, L. Mellbin, A. Norhammar, P. Näsman, S. Smetana, E. Ferrannini, L. Ryden, Sweden, Italy

479 The effect of hypokalaemia during the treatment of diabetic ketoacidosis: a retrospective, single centre analysis
S. Darawshi, A. Miller, M. Qassum, I. Hochberg, Israel

480 The effect of preconceptional gastric bypass surgery on glucose metabolism in pregnancy
T. Linder, G. Kotzaeridi, D. Eppel, I. Rosicky, A. Tura, C. Göbl, Austria, Italy

481 Insulin pump therapy in pregnant women with type 1 diabetes: intermittently scanned glucose monitoring vs sensor augmented pump
C. Sola, K. Mariaca Riveros, C. Milad, D. Roca, A. Amor, M. Giménez, J. Bellart, I. Vinagre, Spain

Short Oral Discussion Event F Thursday, 14:00 - 15:00

SO 24 Grades of insulin sensitivity
Chair: H. Stingl, Austria

482 Magnesium supplementation does not affect insulin sensitivity in people with insulin-treated type 2 diabetes and a low serum magnesium

483 Skeletal muscle insulin sensitivity does not match whole-body insulin sensitivity in patients with pancreatic cancer
K. Koudelkova, E. Vokaty, P. Kuncicky, R. Simak, M. Krbcova, J. Hrudka, L. Rossmeislova, M. Andel, P. Tuma, J. Gojda, Czech Republic

484 Unique signature of circular RNA in skeletal muscle of different insulin sensitivity
M. Yepmo, E. Meugnier, M. Pinget, K. Bouzakri, France
485 A minimal circadian clock network for glucose tolerance in mice
K.B. Koronowski, J.G. Smith, A. Verlande, S. Chen, T. Mortimer,
O. Deryagin, P. Liu, V. Orlando, P. Baldi, C. Jang, S. Masri, S.A. Benitah,
P. Munoz-Canoves, P. Sassone-Corsi, USA, Spain, Saudi Arabia

486 Sex differences in the association between insulin resistance
indexes and myocardial infarction in individuals with different
glycaemic states
A. Riccio, L. Mellbin, A. Norhammar, P. Näsman, L. Rydén, G. Sesti,
G. Ferrannini, Italy, Sweden

487 Chronic effects of an antifibrotic agent eplerenone on insulin
sensitivity and cardiac function in high-fed diet induced insulin
resistance mice
A.K. Banah, V. Musale, C.Z. Murdoch, L. Kang, UK

488 High 1 hour glucose in youths with obesity as marker of
prediabetes and cardiovascular risk
M. Manco, D. Fintini, L. Ravà, M. Mariani, A. Deodati, E. Inzaghi,
S. Pedicelli, C. Bizzarri, M. Cappa, S. Cianfarani, Italy

489 Conversion and reversion rate of metabolic syndrome in
middle-aged and older adults: the China Health and Retirement
Longitudinal study
W. Li, S. Ding, F. Wang, T. Qiao, Q. Li, J. Zhao, China

Short Oral Discussion Event A  Tuesday, 12:30 - 13:30

SO 25  Exercise as medicine

Chair:  B. Ukropcova, Slovakia

490 The effect of insulin-sensitising high-intensity interval training
on selected exerkines and adipokines in obesity and type 2
diabetes
M.H. Petersen, K.J. Kolnes, M.E. De Almeida, E.K. Wentorf, K. Jensen,
A. Handberg, N. Ørtenblad, K. Højlund, Denmark

491 Morning exercise reduces glycaemia in people with type 2
diabetes also being prescribed metformin
B.M. Gabriel, B. Pena Carrillo, O. Duval, E. Cope, S. Gurel, A. Kenny,
S. Philip, F. Thies, D. Blana, UK
492 The transcriptional response to acute exercise is HIF1α dependent and time-of-day specific

493 Glycaemic management around postprandial exercise in people with type 1 diabetes: challenge accepted
S. Helleputte, J. Stautemas, T. De Backer, J. Marlier, B. Lapauw, P. Calders, Belgium

494 Moderate and high-intensity aerobic exercise exert differing metabolic benefits in candidates to undergo bariatric surgery: a randomised controlled trial

495 The effects of a 3-month aerobic-strength training on metabolism, cognition and adiponectin levels in blood and cerebrospinal fluid in the elderly

496 The role of extracellular vesicles derived from continuous aerobic training and high-intensity interval training in beta cell function
Z. Wang, X. Zheng, Sweden, China

497 Impact of a 4-week intensive track and field training on glycaemia in children and adolescents with type 1 diabetes: the ChilDFiT1 study

Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 26  Hormones from the gut and the liver
Chair:  P. Larraufie, France

498 Mapping the druggable targets displayed by human colonic enteroendocrine cells
Y. Lei, M. Jacobs, N. Haq, A. Tsakmaki, B. Hayee, G. Bewick, UK
499 Elevated FGF21 levels after total pancreatectomy and in response to single-dose glucagon receptor antagonist administration in humans

500 Extrapancreatic effects of endogenous incretin hormones evaluated using incretin hormone receptor antagonists in totally pancreatectomised patients
L. Krogh, C.K. Nielsen, N.C. Bergmann, J.J. Holst, A. Lund, L.S. Gasbjerg, F.K. Knop, Denmark

501 Fasting plasma GIP is related to metabolic derangements in health and type 2 diabetes
M.J. Borg, C. Xie, C. Rayner, M. Horowitz, K. Jones, T. Wu, Australia

502 Estimating the incretin effect from a glucose-insulin-glucagon coupled model of OGTT
V. Subramanian, J.I. Bagger, V. Harihar, J.J. Holst, F.K. Knop, T. Vilsbøll, USA, Denmark

503 Plasma relaxin-2 concentrations are related to parameters of glucose homeostasis in patients with essential hypertension and type 2 diabetes
O. Pankova, O. Korzh, Ukraine

Short Oral Discussion Event C    Wednesday, 12:45 - 13:45

SO 27   Glucagon secretion and peripheral hormone action
Chair    G. Rega-Kaun, Austria

504 Chloride currents underlie basal and alanine-induced alpha cell activity

505 Accumulation of sodium is required for glucose inhibition of glucagon secretion from pancreatic alpha cells
S.L. Armour, J.G. Knudsen, Denmark

506 Glucose mediated production of redox equivalents increases the secretory potential of alpha cells
A. Frueh, G. Katzilieris-Petras, S. Armour, J.G. Knudsen, Denmark
507 Metabolic effect of epinephrine infusion in people with type 1 diabetes and healthy individuals

508 Fibroblast activation protein in patients with growth hormone deficiency: before and after treatment
A. Bæk, M.C. Arlien-Søborg, A.K. Pedersen, N. Jessen, M. Bjerre, J.O. Jørgensen, Denmark

509 Effects of glucose and insulin in the modulation of expression and secretion of human sex hormone binding globulin in HepG2 cells
V.A. Genchi, A. Cignarelli, C. Lauriola, S. Perrini, A. Natalechio, L. Laviola, F. Giorgino, Italy

Short Oral Discussion Event D       Wednesday, 14:00 - 15:00

SO 28 Pregnant with type 1 diabetes and adverse pregnancy outcomes
Chair: B. Pintaudi, Italy

510 Delayed attainment of recommended glycaemic metrics in target in women with type 1 diabetes delivering large for gestational age infants

511 Pregnancy planning and time in range are essential for pregnancy outcomes in type 1 diabetes
A. Juza, L. Kołodziej-Spirodek, M. Dąbrowski, Poland

512 Associations of continuous glucose monitoring metrics and antepartum glucose with the risk of neonatal hypoglycaemia in women with type 1 diabetes
X. Li, Y. Gong, P. Ling, C. Wang, J. Yan, S. Luo, X. Zheng, D. Yang, China

513 Impact of gestational weight gain on maternal-fetal comorbidities in type 1 diabetic pregnancies by trimester
M. Lemaitre, V. Laurent, C. Ternynck, J. Bourry, F. Baudoux, D. Subtil, A. Vambergue, France
514 New clinical score to predict neonatal hypoglycaemia in women with gestational diabetes

515 Insulin reverts macrosomia in a mouse model of gestational diabetes
L. Hernandez-Baraza, I. Alemán-Cabrera, C. Valverde-Tercedor, A.M. Wägner, L. Fernández-Pérez, B. Guerra, Y. Brito-Casillas, Spain

516 Association between HbA₁c levels and materno-foetal complications in type 2 diabetes
A. Vambergue, E. Petit, M. Lemaitre, C. Ternynck, F. Baudoux, E. Drumetz, D. Subtil, France

517 Association between TGFβ1 levels in cord blood and weight progress in the first year of life
N. Kabbani, M. Blüher, T. Ebert, H. Stepan, J. Breitfeld, R. Baber, M. Vogel, W. Kiess, U. Lössner, A. Tönjes, S. Schrey-Petersen, Germany

Short Oral Discussion Event E Thursday, 12:45 - 13:45

SO 29 Gestational diabetes

Chair: J.K. Mader, Austria

518 mHealth-apps reduce the risks of neonatal complications in mothers with gestational diabetes significantly: a meta-analysis
C. Eberle, C.-M. Grollmann, Germany

519 Glucagon and insulin resistance in Chinese women with gestational diabetes
C. Chen, D. Zhang, T. Wu, H. Zhang, China, Australia

520 Postpartum development of non-alcoholic fatty liver disease in a lean mouse model of gestational diabetes
K. Hribar, D. Eichhorn, N.J. Kloosterhuis, J.K. Kruit, M.H. Oosterveer, E.M. Van der Beek, Netherlands, Switzerland

521 Gestational diabetes diagnosis in the Swedish Pregnancy Register

523 Prevalence of thyroid dysfunction in pregnant women with or without gestational diabetes  
F. Carriera, F. Ginestra, M.A. Carluccia, G. Di Dalmazia, M.P. Baldassarre, I. Cipollonia, I. Buccia, G. Napolitanob, A. Consoli, G. Formosoc, Italy

524 Prediction of gestational diabetes risk with visceral fat tissue in a multiethnic cohort  

525 Adipose tissue insulin resistance, liver fat and fetuin-A in South Asian and Nordic women after gestational diabetes  
S. Lee-Ødegård, A. Suntharalingam, H.L. Gulseth, I. Nermo, S.T. Sollid, E. Qvigstad, K.I. Birkeland, A. Sharma, Norway

Short Oral Discussion Event F  Thursday, 14:00 - 15:00
SO 30  Insulin secretion: for better or for worse  
Chair: P. Fasching, Austria

526 Inhibition of de novo ceramide synthesis pathway in pancreatic beta cell causes massive defects in insulin secretion  

527 The dual incretin coagonist tirzepatide contributes to glucose elimination by increasing both insulin secretion and glucose effectiveness in model experiments in mice  
B. Ahrén, G. Pacini, Sweden, Italy

528 Longitudinal changes in sex hormone-binding globulin and free testosterone in men living with HIV: relationships with dysglycaemia, insulin secretion and sensitivity  
529 Dried blood spot C-peptide measurements show robust performance in assessing endogenous insulin secretion in individuals with young-onset insulin-treated diabetes

530 Residual insulin secretion is associated with lower BMI and reduced central obesity indices in patients with type 1 diabetes
G. Karamanakos, A. Barmagianni, I.A. Anastasiou, S. Driva, A. Kountouri, V. Lambadiari, S. Liatis, Greece

531 Alterations in G protein-coupled receptor ligand mRNAs in gastrocnemius muscle of diet-induced obese mice
Z. Lyu, O. Olaniru, P. Atanes, S. Persaud, UK

**Short Oral Discussion Event A**  
**Tuesday, 12:30 - 13:30**

**SO 31 It’s in the brain**  
*Chair:* J. Rungby, Denmark

532 Glucagon receptor immunoexpression in brain barrier interfaces in developing human and adult mouse brain
C. Bjørnbak Holst, N.J. Wewer Albrechtsen, K. Møllgård, Denmark

533 Azgp1 signalling in POMC neurons confers protection against diet-induced obesity and hepatic steatosis
S. Qiu, G. Yang, M. Yang, L. Li, China

534 Central p62 contributes to peripheral energy metabolic balance and homeostasis via STAT3-POMC signalling
S. Yang, L. Li, G. Yang, China

535 Hypothalamic GPC4 and its N-glycosylation regulate feeding and energy metabolism through IR/AKT/FoxO1 signalling pathway
X. Xia, L. Li, G. Yang, China

536 The role of sodium-glucose cotransporter-2 inhibitors in the hypothalamic control of energy homeostasis
D. Yi, Republic of Korea

537 Reduced hypothalamic leptin signalling leads to hepatic steatosis, insulin and glucagon resistance, and hyperglucagonaemia in adult rats
N. Gallardo, C. Pintado, L. Mazuecos, Ó. Gómez, B. Merino, E. Burgos-Ramos, E. Casanueva-Álvarez, S. Artigas, M. Villar, E. Moltó, G. Perdono, I. Cózar-Castellano, C. Arribas, E. Bernal-Mizrachi, A. Andrés, Spain, USA
538 Deletion of p38α in POMC neurons ameliorates obesity via increasing adipose thermogenesis
J. Wang, S. Wu, Y. Ge, H. Zhan, W. Bi, L. Peng, Y. Xu, Y. Liang, X. Jin, J. Zhao, L. Gao, Z. He, China

539 Defective branched-chain amino acids catabolism in the hypothalamus leads to adiposity
X. Ming, M. Yuan, J. Tan, J. Hong, J. Wang, G. Ning, W. Wang, H. Sun, L. Zhou, X. Wang, China

**Short Oral Discussion Event B**
**Tuesday, 13:45 - 14:45**

**SO 32**  Keeping focus on GLP1

*Chair:* T.D. Müller, Germany

540 Exercise as weight loss maintenance strategy increases postprandial secretion of glucagon-like peptide 1

541 A human enteroid model for study the mechenisms of GLP-1 secretion in obesity and type 2 diabetes

542 Efficacy and safety of tirzepatide once weekly in Chinese participants with obesity or with overweight and weight-related comorbidities
L. Zhao, Z. Cheng, Y. Lu, M. Liu, H. Chen, M. Zhang, R. Wang, Y. Wang, Y. Yuan, X. Li, China, USA

543 Exercise combined with GLP-1 receptor agonist preserves bone mineral density during weight loss maintenance

544 Bile acid, fibroblast growth factor-19, and glucagon-like peptide-1 levels in the long term after bariatric surgery in patients with type 2 diabetes
Y.-B. Ahn, J.-S. Yun, E. Lee, K.-H. Song, J.-H. Han, S.-D. Moon, M. Kim, Republic of Korea
545 The effects of DPP-4 inhibitors in human macrophages
E. Benetti, V. Bordano, V. Boscaro, S. Cannito, V. Altamura, M. Barberis,
A. Rosa, C. Bocca, T. Klein, C. Dianzani, Italy, Germany

546 Oral anti-diabetic drugs reverse diabetogenic proteomic
signature of gut-derived extracellular vesicles
A. Teshima, E. Torrejon, A. Carvalho, H.C. Beck, R. Matthiesen,
M.P. Macedo, R.M. De Oliveira, Portugal, Denmark

547 Cagrisema eliminates weight loss associated reduction in
energy expenditure in diet-induced obese rats
R.E. Kuhre, B. Hald, J.M. Jacobsen, S. Lundh, M.K. Gerstenberg,
A. Secher, K. Raun, Denmark

Short Oral Discussion Event C  Wednesday, 12:45 - 13:45

SO 33  Weight loss rules
Chair: C. Conte, Italy

548 The effect of bariatric surgery on blood pressure management
in type 2 diabetes: insights from a 13 year follow up study
U. Waheed, P. Ghaffari, A. Syed, R. Donn, H. Soran, A. Heald, UK

549 Opposing patterns in eating behaviours after surgical versus
diet-induced weight loss
L. Vuorela, B.J. Berntzen, M. Maheswary, T. Saarinen, S. Meriläinen,
V. Koivukangas, L. Suojanen, P.-H. Groop, A. Rissanen, K. Virtanen,
A. Juuti, K.H. Pietiläinen, S. Heinonen, Finland

550 Predictors for insufficient weight loss, defined as %EWL< 50%
at 1 year after bariatric surgery
V. Parzer, J.M. Brix, S.L. Huber, B. Ludvik, Austria

551 Sarcopenic obesity and associated body composition
characteristics in individuals undergoing bariatric sugery: a
retrospective study
K. Verboven, F.V. Machado, V. Schildermans, G. Hertogs, W. Bouckaert,
Belgium

552 Data-driven clustering of obese patients in a behavioural
weight-loss programme
H. Schlögl, A. Kühnapfel, S. Frenzel, M. Blüher, M. Stumvoll, T. Ebert,
Germany
553 The xanthine oxidoreductase inhibitor febuxostat promotes brown adipocyte differentiation and enhances brown adipose tissue function
Y. Li, Y. Fujita, H. Minamino, T. Goto, S. Kawarasaki, N. Isomura, K. Takesue, F. Furuya, Y. He, J. Zhang, N. Inagaki, Japan

554 The metagenomic and metabolomic analysis supports unfavourable risk-benefit balance of the ketogenic diet
J. Shi, N. Hou, F. Han, C. Kan, X. Sun, H. Qiu, China

555 Glutamine supplementation in high fat diet improves glucose tolerance and adipose tissue metabolism in mice
V. Meskarova, R. Coupeau, M. Dzubanova, A. Benova, M. Ferencakova, M. Vodickova, M. Tencerova, Czech Republic

Short Oral Discussion Event D  Wednesday, 14:00 - 15:00

SO 34  Metabolic flames
Chair:  C. Brons, Denmark

556 Glucose-dependent responses of inflammatory markers in obese compared to lean individuals
M.H. Lundqvist, M.J. Pereira, J.W. Eriksson, Sweden

557 Intracellular metabolites accumulated in metabolically activated macrophages
W. He, A. Künne, M. Ohm, M. Korte, K. Hiller, Germany

558 Methylglyoxal is a mediator of the association between 2-hour glucose, HbA₁c and inflammation: The Maastricht Study
D. Sun, M.M. Greevenbroek, J.L. Scheijen, S.J. Eussen, C.D. Stehouwer, K.A. Wouters, C.G. Schalkwijk, Netherlands

559 Changes in inflammatory markers in response to 4-weeks of carbohydrate overfeeding in men born with a low birth weight

560 Inflammatory and endothelial host responses in community-acquired pneumonia: associations with HbA₁c, admission plasma glucose, and glycaemic gap: a cross-sectional study
561 Role of the soluble interleukin-6 receptor in obesity, type 2 diabetes and metabolic inflammation

562 Inborn and adaptive immune system responses to remission of type 2 diabetes
A.F. Pfeiffer, J. Zhang, K.J. Rüther, B. Schuppelius, E. Lalama, M. Csanalosi-Artigas, N. Kraenkel, S. Kabisch, S. Nasic, A. Burness, A. Christ, E. Latz, Germany

563 The effect of beta-hydroxybutyrate on the IL-10/TNF-a signalling axis in type 2 diabetes
H. Neudorf, K. Falkenhain, B. Oliveira, H. Islam, G. Jackson, K. Madden, J. Little, Canada

Short Oral Discussion Event E Thursday, 12:45 - 13:45

SO 35 Sex and time matters
Chair: S. Ozanne, UK

564 The BMAL2 circadian clock gene controls inflammation and metabolic adaptation in adipose tissue during diet-induced obesity
M.A. Philippe, B. Fruchet, E. Challet, A. Lehuen, A. Toubal, U.C. Rogner, France

565 Human proinflammatory cytokines exhibit circadian rhythm of secretion that is tissue specific and perturbed in type 2 diabetes patients
A. Lesniewska, O. Fiammingo, F. Sinturel, E. Lefai, P. Schrauwen, J. Hoeks, V. Petrenko, C. Dibner, Switzerland, France, Netherlands

566 The liver clock drives circadian regulation of adipogenic genes in white adipose tissue
P. Petrus, Sweden

567 The effect of sex and reproductive status on metabolic parameters and liver steatosis in metformin-treated animal model of insulin resistance
I. Markova, D. Miklankova, M. Hüttl, H. Malinska, Czech Republic
568 High-fat diet induces sex-specific divergent adaptations in liver and adipose tissue in mice
V. Ribas, S. Moron-Ros, L. Brugnara, M. Azagara, A. Herrero, E. Eyre, M. Claret, I. Marco-Rius, A. Novials, J.-M. Servitja, Spain

569 Sexually dimorphic responses in obesity, glucose tolerance and diabetes caused by CCN5/ WISP2 gene deficiency and adipocyte-specific overexpression
J.-L. Liu, T. Alami, M. Zakikhani, V. Xega, Canada

570 Familial partial lipodystrophy: anthropometric, biochemical, genetic and imaging characteristics in females

571 Sestrin2 knockout exacerbates high-fat diet induced metabolic disorders in female mice
C. Kan, L. Zhang, Y. Luo, K. Zhang, J. Zhang, F. Han, N. Hou, X. Sun, China

**Short Oral Discussion Event F  Thursday, 14:00 - 15:00**

**SO 36 Obesity and diabetes across generations**

*Chair:* R. Teperino, Germany

572 The dysregulation of energy balance crosstalk between the hypothalamus and the brown adipose tissue in overfed rats exposed to maternal glycation
D. Sousa, A. Amaro, M. Rocha, M. Junior, C. Barra, R. Mello-Gomes, P. Matafome, Portugal, Brazil

573 An abdominal fat partitioning pattern characterises risk for gestational diabetes in Asian women

574 Paternal childhood obesity induced transgenerational inheritance of obesity in mice up to the F3
M. Mourin, F. Palmieri, I. Palacios-Marín, J. Cebria, M. Ramon-Krauel, C. Lerin, J. Jimenez-Chillaron, Spain
575 Multi-omics analysis of hepatoblast development reveals sex-specific responses to maternal high-fat diet feeding

576 Hyperglycaemia in pregnancy leads to sex-specific differences in metabolism and pancreatic beta cell function in young adult offspring
L. Nicholas, S. O’Hara, K. Gembus, G. Clarke, A. Page, Australia

577 Impact of maternal high caloric feeding on aldehyde dehydrogenase 1a7 (Aldh1a7) expression in E13.5 adipocytes and its role in adipogenic differentiation
M. Schouwink, C. Uhlemeyer, P. Petzsch, K. Köhrer, B.-F. Belgardt, S. Öner-Sieben, R. Ensenauer, Germany

578 Effect of maternal thyroid hormones during gestation on the epigenetic regulation of Leptin transcription
L. Müller, R. Ölkrug, J. Mittag, P. Kovacs, K. Krause, M. Keller, Germany

579 Postnatal overfeeding triggers sex-specific neurodevelopmental delay and induces anxious-like behaviour accompanied by brain-region-specific synaptic imbalance

Short Oral Discussion Event A Tuesday, 12:30 - 13:30

SO 37 Hormonal control of obesity

Chair: L. Dollet, Sweden

580 Dopaminergic regulation of neuropeptide Y and Melanocortin systems in the adipose tissue as a therapeutic target to metabolic dysregulation associated with obesity
E. Lopes, D. Rosendo-Silva, P. Matafome, Portugal

581 Subcutaneous adipose tissue dopamine receptor D2 expression is increased in prediabetes and type 2 diabetes
582 Inappropriately high leptin levels are associated with hyperinsulinaemia and insulin resistance in overweight/obese youths
L. Sacchetta, M. Chiriacò, A. Natali, N. Santoro, A. Galderisi, R. Weiss, S. Caprio, D. Tricò, Italy, USA, Israel

583 Dual amylin and calcitonin receptor agonists increase mitochondrial respiratory capacity in adipose tissues of obese rat
E.A. Petersen, I. Blom, S.A. Melander, M.A. Karsdal, S. Larsen, K. Henriksen, A.T. Larsen, Denmark, Switzerland, Poland

584 A role for circulating levels of adipocytokines, miRNA and miRNA variants (isomiRs) in renal dysfunction in patients with morbid obesity
R. Vila-Bedmar, M. Martín-Taboada, B. Lanzón, I. González de Pablos, L. Torres, P. Corrales, P. Gómez-Rodríguez, E. Rodríguez-Cuéllar, E. Porrini, E. Morales, G. Medina-Gómez, Spain

585 Fibroblast growth factor 21 restores glucose-lowering action of CL 316,243 in obese mice
S. Stanić, J. Kopecky, P. Zouhar, Czech Republic

586 A novel potential therapeutic target in metabolic disease: role of Ghrelin/GHSR/LEAP2 in type 2 diabetes and obesity
L. Yue, R. Cheng, China

587 Comparative analysis of islet GPCR-targeting adipokine mRNA expression between diet-induced and genetically obese mouse models
T. Ashik, P. Atanes, M. Wilson, T. Pullen, S.J. Persaud, UK

Short Oral Discussion Event B       Tuesday, 13:45 - 14:45

SO 38  Fantastic fats and where to find them

Chair:     L. Rossmeislová, Czech Republic

588 Role of hepatic sphingosine-1-phosphate in the regulation of insulin sensitivity in response to lipotoxicity
589 Omega-3 polyunsaturated fatty acids prevent increased bone marrow adiposity caused by high fat diet in mice

590 Beneficial effect of empagliflozin on lipid metabolism in heart and liver in a model of prediabetes
H. Malinska, D. Miklankova, I. Markova, M. Hüttl, Czech Republic

591 Ceramides are higher in brown fat than white fat in adult humans

592 Serum short-chain fatty acids are associated with brown adipose tissue metabolism in humans
M. Monfort-Pires, M. U-Din, V. De Mello, T. Saari, J. Raiko, K. Hanhineva, T. Fromme, R. Landberg, M. Klingenspor, K.A. Virtanen, Finland, Germany, Sweden

593 CD36 regulates FFA-Fetuin-A mediated inflammation and lipid accumulation in pancreatic beta cells
S. Mandal, S. Nag, R. Kundu, India

594 Renal function is a major predictor of circulating acyl-CoA-binding protein/diazepam-binding inhibitor
R. Schürfeld, B. Sandner, A. Hoffmann, N. Klöting, A. Bachmann, A. Frille, A. Dietel, J.-U. Stolzenburg, M. Blüher, M.-Z. Zhang, R. Harris, B. Isermann, M. Stumvoll, A. Tönjes, T. Ebert, Germany, USA

595 Can we leverage CD38 as an NAD+-boosting treatment for metabolic dysfunction during ageing?
B. Osborne, M.H. Nielsen, M. Ben Ezra, M.A. Petr, R. McIntyre, R.H. Houtkooper, A. Jafari, M. Kassem, M. Scheibye-Knudsen, Denmark, Netherlands
**Short Oral Discussion Event C**  **Wednesday, 12:45 - 13:45**

**SO 39 Fat across organs**

*Chair:* TBA

596 Effects of extracellular vesicles on pancreatic beta cells during obesity progression in mice
S. Morón-Ros, V. Ribas, L. Brugnara, A. Novials, J.-M. Servitja, Spain

597 TRAPα deficiency impairs the early events of insulin biosynthesis causing age- and diet-related impaired glucose tolerance
X. Li, J. Hu, Y. Huang, X. Xu, S. Wang, J. Sun, M. Liu, China

598 The long non-coding RNA βlitr regulates islet beta cell function in obesity
G. Li, D. Liu, L. Li, China

599 TUDCA treatment reduces hepatic glucose production and glucagon secretion in malnourished mice fed with high-fat diet
J.A. Silva Junior, K.M. Oliveira, T.R. Araújo, B.L. Alves, E.M. Carneiro, Brazil

600 N-acetyl-L-cysteine supplementation prevents beta cell oxidative stress and intra-islet stellate cell activation in aging mice undergoing high-fat diet challenge
M.A. Schuurman, J. Nguyen, R. Wang, Canada

601 Inhibition of GPR120 signalling in intestine ameliorates insulin resistance and fatty liver under high-fat diet feeding

602 Dapagliflozin counteracts the pro-apoptotic effects of the secretome of adipose cells from obese subjects in human cardiac progenitor cells via the SGLT2 co-transporter
G. Palma, C. Caccioppoli, R. D’Oria, V.A. Genchi, I. Calderoni, A. Braun, T. Bottio, G. Santarpino, A. Cignarelli, A. Natalicchio, L. Laviola, A. Pezzolla, A. Milano, F. Giorgino, S. Perrini, Italy

603 New insights into the effect of empagliflozin on hepatic dysmetabolism in diabetic obese Zucker rats
C. Pirozzi, S. Melini, F. Comella, A. Aragón Herrera, A. Lama, Y. Farrag, G. Mattace Raso, O. Gualillo, F. Lago Paz, R. Meli, Italy, Spain
Short Oral Discussion Event D  Wednesday, 14:00 - 15:00

SO 40  Metabolism in humans

Chair:  K.I. Birkeland, Norway

604 Adolescents living with obesity in ACTION Teens: unawareness of their obesity affects their perceptions, attitudes and behaviours

605 Bioelectrical impedance derived Phase Angle (PhA) in people living with obesity among different weight status and inflammatory biomarkers

606 Correlation of body mass index with body fat indices, skeletal muscle mass, neck circumference waist-hip ratio in people with type 2 diabetes
S. Patange, India

607 The interplay between fat deposition and diabetic-status hyperglycaemia: insights from Bayesian-network modelling
T. Waddell, A. Namburete, H. Thomaides-Brears, M. Brady, UK

608 Adenosinergic system correlates with BMI in dysmetabolic patients
F. Martins, R.E. Figueiredo, R.O. Oliveira, S.V. Conde, Portugal

609 Loss of adipose tissue plasticity as an early hallmark of insulin resistance and metabolic maladaptation in patients with obesity
D. Rosendo-Silva, B. Almeida, P.B. Gomes, S. Viana, F. Reis, R. Seiça, P. Matafome, Portugal

610 Impact of HIV and menopause on adipose tissue function, insulin sensitivity and beta cell function in middle-aged black African women
611 LEAP2 reduces preprandial and postprandial glucose responses and ad libitum food intake in obese men
A. Englund, C.A. Hagemann, L.S. Gasbjerg, F.K. Knop, Denmark

**Short Oral Discussion Event E  Thursday, 12:45 - 13:45**

SO 41  Novel players in adipocyte biology

*Chair:* A. Georgiadi, Germany

612 Cables1 expression is reduced in human subcutaneous adipose tissue in obesity and type 2 diabetes but may not directly impact adipocyte glucose and lipid metabolism

613 Identification and functional investigation of novel candidate genes for type 2 diabetes on chromosome 4
K. Kaiser, S. Görgik, T. Kuhn, D. Altenhofen, J. Khuong, J. Decker, S. Lebek, A. Schürmann, A. Chadt, H. Al-Hasani, Germany

614 Mir-29b-3p: regulator and extracellular biomarker of adipose tissue fibrosis in obesity and prediabetes

615 IL-27 increases energy storage in white adipocytes by enhancing glucose uptake and fatty acid esterification
C. Scaffidi, D. Konrad, S. Wueest, Switzerland

616 Characterisation of the catecholamine transporter OCT3 in human adipose tissue: implications for age-induced reduction of subcutaneous adipose tissue lipolysis

617 The impact of epigenetic editing within the Sarcospan promoter on adipogenesis
K.A. Dinter, L. Müller, P. Kovacs, M. Keller, Germany

618 Expression of selected microRNAs in adipose tissue-derived mesenchymal stem cells and metabolic syndrome
619 Human pancreatic adipocyte spheroids as model to study the role of pancreatic fat in type 2 diabetes
E. Lorza-Gil, E. Ziegler, O. Strauss, S. Singer, S. Nadalin, A.L. Birkenfeld, F. Gerst, Germany

Short Oral Discussion Event F Thursday, 14:00 - 15:00

SO 42  Tirzepatide: SURPASSing the vibe check
Chair: B. Eliasson, Sweden

620 Effect of tirzepatide in GADA-positive individuals with type 2 diabetes: a post hoc analysis of the SURPASS 2-5 trials
R. Buzzetti, A.L. Peters, C.J. Lee, I. Pavo, M. Liu, J.S. Paik, Italy, USA

621 Efficacy of tirzepatide in people with young-onset type 2 diabetes in the SURPASS programme
M.J. Davies, Z. Philip, R.J. Galindo, B.K. Bergman, V.T. Thieu, C. Nicolay, S. Allen, C.J. Lee, UK, USA

622 Effect of tirzepatide on the counter-regulatory response to hypoglycaemia during a hypoglycaemic clamp in people with type 2 diabetes

623 Tirzepatide improves amino acid profile in people with long-standing diabetes and increased cardiovascular risk in the SURPASS-4 trial
V. Pirro, Y. Lin, J.A. Willency, A. Abadi, R.J. Wiese, K.L. Duffin, I. Pavo, USA

624 Tirzepatide improves health-related quality of life vs insulin lispro in poorly controlled basal insulin-treated adults with type 2 diabetes (SURPASS-6)

625 Baseline HOMA2-B can predict tirzepatide efficacy: post hoc analysis of the SURPASS-1 and SURPASS-2 studies
J. Peleshok, S.H. Hsia, C. Mathieu, M.K. Thomas, H. Wang, USA, Belgium
626 Tirzepatide vs basal insulins in people with type 2 diabetes and different baseline glycaemic patterns: post-hoc analyses of the SURPASS-3 and -4 trials
F. Giorgino, D.R. Franco, C. Nicolay, A. Hemmingway, Á. Rodríguez, R.J. Wiese, Italy, Brazil, USA

627 Early reduction in fasting serum glucose during treatment with once-weekly tirzepatide predicts response to therapy in people with type 2 diabetes (SURPASS 1-4)
E. Razzoli, F. Giorgino, I. Lingvay, V.T. Thieu, M. Liu, J.A. Levine, USA, Italy

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**Short Oral Discussion Event A**  
**Tuesday, 12:30 - 13:30**

**SO 43  Small molecules to combat a large disease**

*Chair:*  
F. Gribble, UK

628 Discovery of HDM1002, a selective, potent, oral small-molecule GLP-1R agonist for treatment of type 2 diabetes and obesity
H. Pan, W. Zhai, Z. Zhang, L. Guo, Z. Dong, M. Zhao, D. Liu, China

629 Safety, tolerability, pharmacokinetics, and pharmacodynamics of a novel oral small molecule GLP-1 receptor agonist (HRS-7535) in healthy subjects

630 Effect of oral non-peptide GLP-1 receptor agonist orforglipron (LY3502970) in participants with obesity or overweight: a phase 2 study
S. Wharton, T. Blevins, L. Connery, J. Rosenstock, S. Raha, K.J. Mather, A. Haupt, D. Robins, E. Pratt, C. Kazda, M. Konig, Canada, USA

631 Efficacy of novel small molecule GLP-1 receptor agonist AZD0186 on glucose stimulated insulin secretion in obese, male non-human primates

632 HTD1801 improves glycaemic control in patients with type 2 diabetes: double-blind, placebo-controlled, phase 2 study
L. Ji, J. Ma, J. Ma, Z. Cheng, S. Gan, G. Yuan, D. Liu, S. Li, Y. Liu, X. Xue, J. Bai, K. Wang, H. Cai, S. Li, L. Liu, China
633 Deciphering glucokinase regulation and modulation for diabetes treatment in the model organism zebrafish (Danio rerio)  

634 Lactic acid functionalised AuCePt porous hollow nanozyme targeted to alleviate hepatic insulin resistance  
Y. Fu, L. Li, M. Yang, China

**Short Oral Discussion Event B  Tuesday, 13:45 - 14:45**

**SO 44  I heard the news today: novel incretins**

*Chair:* T. Karagiannis, Greece

635 Evaluation of the pharmacokinetics of glucagon-like-peptide-1 receptor agonist delivered through the BioJet™ biotherapeutic delivery platform in swine  

636 A single ascending dose study of the novel GLP-1 receptor agonist GL0034 (utreglutide) in individuals with obesity without diabetes  

637 Pharmacology characterisation of a novel GLP-1R agonist GSBR-2657 in a new humanised GLP-1R mouse model  
T. Mao, H. Zhang, X. Fang, S. Zhan, T. Wang, Z. Guan, J. Zhang, X. Lin, H. Lei, F. Zhang, China

638 A phase 3, randomised, double-blind, placebo-controlled, 52-week study to evaluate the efficacy and safety of once-weekly PB-119 as add-on to metformin in patients with type 2 diabetes in China  
M. Xu, Pegbio study group, China

639 Efficacy and safety of supaglutide as add-on to metformin in patients with type 2 diabetes  
D. Anwar, Y. Bao, Y. Zhou, S. Chen, J. Zhou, L. Li, Z. Cheng, X. Dong, X. Shi, N. Zhao, Y. Yang, J. Ma, Y. Li, Q. Wang, W. Jia, China
640 Efficacy and safety of supaglutide monotherapy in patients with type 2 diabetes
Q. Wang, Y. Zhou, L. Li, W. Wang, G. Tong, B. Shi, X. Hu, F. Bian, Q. Li, Y. Wang, N. Zhao, J. Ma, Y. Li, D. Zhu, China

641 Safety and tolerability of multiple ascending doses of once-weekly GL0034 (utreglutide) in healthy individuals

642 Hsk7653, a novel biweekly DPP-4 inhibitor, versus daily linaglaptin as add-on therapy to metformin in Chinese patients with type 2 diabetes
Q. Ren, L. Ji, L. Li, X. Su, X. Hu, G. Qin, J. Han, China

Short Oral Discussion Event C  Wednesday, 12:45 - 13:45

SO 45  Dual agonism: two of us
Chair:  P. Karasik, Israel

643 HbA1c reduction with tirzepatide in people with type 2 diabetes: a mediation analysis using body weight loss as a factor
T. Vilsbøll, C. Nicolay, M. Malecki, V. Thuyanh Thieu, K. Chivukula, J. Kiljanski, Denmark, USA, Poland

644 Fat specific weight loss in diet-induced obesity mouse model when treated with bispecific GLP-1R/GLP-2R agonist vs dual GLP-1R/GIPR agonist
T. Oh, S.-I. Yang, J. Roh, R. Sung, Republic of Korea

645 BI 456906 acts through circumventricular organs in the brain and activates neuronal pathways associated with appetite regulation
T. Zimmermann, P. Haebel, K. Bleymehl, J. Perens, U. Roostalu, J. Hecksher-Sørensen, R. Augustin, Germany, Denmark

646 A pilot study using [18F]FDG PET/MRI to investigate dual GLP-1 and glucagon receptor agonism on myocardial glucose uptake and myocardial function in adults with type 2 diabetes
647 Safety, tolerability, pharmacokinetics (PK), and pharmacodynamics (PD) of a dual GLP-1/GIP receptor agonist (HRS9531) in healthy subjects
Q. Wen, K. He, F. Wei, H. Chen, Y. Zhang, Z. Sheng, L. Yin, China

648 A long-acting glucose-dependent insulinotropic polypeptide receptor agonist improves gastrointestinal tolerability of glucagon-like peptide 1 receptor agonist therapy
F.K. Knop, S. Urva, M. Rettiganti, C. Benson, W.C. Roell, K.J. Mather, A. Haupt, E. Pratt, Denmark, USA

649 Dual amylin and calcitonin receptor agonists alone or in combination with semaglutide result in long-term sustained improvement of metabolic status in obese and diabetic rats
A.T. Larsen, K.E. Mohamed, S.A. Melander, M.A. Karsdal, K. Henriksen, Denmark, Switzerland

Short Oral Discussion Event D  Wednesday, 14:00 - 15:00

SO 46  GLP-1 receptor agonists: action beyond glycaemia
Chair:  A.F.H. Pfeiffer, Germany

650 The carotid body mediates GLP-1 actions on glucose homeostasis

651 Effects of reendothelialisation with exenatide treatment add on to insulin vs insulin alone, both in combination with metformin in subjects with type 2 diabetes: Rebuild study
I. Santos-Pardo, N. Witt, T. Nyström, Sweden

652 The GLP-1 receptor agonist liraglutide alleviates type 2 diabetes-related diastolic dysfunction in a pyruvate dehydrogenase dependent manner

653 Does the hypothalamus-pituitary-adrenal axis play a role in the difference in treatment response to GLP-1 receptor agonists in type 2 diabetes?
M. Boss, S. Tokgöz, T.J. Jansen, R. Meijer, C. Frielink, C.J. Tack, B.E. De Galan, M. Gotthardt, Netherlands
654 Efficacy and safety of GLP1RAs in liver-transplanted patients with diabetes: a 12 months follow up evaluation
V. Grancini, I. Cogliati, A. Gaglio, V. Resi, E. Orsi, Italy

655 Effect of exenatide once-weekly (QW) on the blood pressure and glycaemic responses to a mashed potato meal in type 2 diabetes: relationships to gastric emptying

656 Comparison of changes in the gut microbiota influenced by combinations of liraglutide with metformin and pioglitazone with metformin in overweight patients with diabetes
K. Moskva, O. Kikhtyak, L. Lapovets, F. Lanyush, Ukraine

657 Glucagon-like peptide-1 receptor agonists for diabetes treatment in solid organ transplant recipients: a case series of 30 patients from a tertiary centre

**Short Oral Discussion Event E**
**Thursday, 12:45 - 13:45**

**SO 47 Incretin trials: trying new directions**
*Chair:* A. Andersen, Denmark

658 A randomised controlled open label trial examining the safety of label-recommended semaglutide 1mg dose escalation vs a slower and flexible titration regimen

659 Changes in liver and abdominal fat in tirzepatide-treated patients achieving normoglycaemia in the SURPASS-3 MRI substudy
Á. Rodríguez, K. Cusi, A. Gastaldelli, C. Nicolay, A. Torcello-Gómez, L. Fernández Landó, USA, Italy

660 Safety and efficacy of tirzepatide for SURPASS-2 through -5 participants ≥65 years old with BMI <30 kg/m²: a post hoc analysis
J. Wilding, N. Rasouli, A. Kwan, J. Paik, M. Liu, J. Peleshok, UK, USA
661 Early weight loss and late metabolic outcomes in tirzepatide-treated participants with type 2 diabetes
L.F. Van Gaal, I. Lingvay, F. Giorgino, M. Liu, Á. Rodríguez, A. Torcello-Gómez, J. Kiljański, Belgium, USA, Italy

662 Glucagon-like peptide-1 receptor agonist-experienced adults with type 2 diabetes switching to once-weekly semaglutide: post hoc analysis of the real-world SURE programme
G. Rudofsky, M. Menzen, L. Potier, A.-M. Catarig, A. Clark, P. Priyadarshini, C. Abreu, Switzerland, Germany, France, Denmark, India, Spain

663 Saxagliptin in children and adolescents (age 10-17 years) with type 2 diabetes
P. Galassetti, N. Shehadeh, N. Iqbal, C. Stahre, R. Pandherpur, J. Monyak, W. Tamborlane, USA, Israel, Sweden, India

664 Comparative effectiveness of GLP-1 receptor agonists vs DPP-4 inhibitors in patients with type 2 diabetes and moderate/severe chronic kidney disease
K.R. Tuttle, P. Fioretto, A. Clark, A.B. Jensen, N. Belmar Nazal, P. Rossing, USA, Italy, Denmark

665 Improved BMI category is associated with better patient-reported outcomes in adults with type 2 diabetes treated with tirzepatide
V. Thieu, C.J. Lee, K. Boye, S. Allen, W. Dong, H. Sapin, USA

Short Oral Discussion Event F Thursday, 14:00 - 15:00

SO 48 Incretins: a day in the life
Chair: S. Wild, UK

666 Semaglutide therapy resulted in significant sustained reduction in blood glucose and weight over three years in patients with type 2 diabetes in a real world setting
C. Melzer-Cohen, A. Aharonovich, L. Bourvine, S. Gazit, A. Karasik, Israel

667 Trends in use of incretin-based medications among adults with type 2 diabetes: a nationwide cohort study
E. Patorno, H. Tesfaye, E. D`Andrea, D.J. Wexler, A. Kutz, USA
668 Clinical outcomes associated with the use of oral semaglutide in an adult population with type 2 diabetes in Canada: a prospective real-world study (PIONEER REAL Canada)
S.M. Reichert, H. Amadid, U.C. Braae, R.M. Bradley, J. Kim, V. Soo, J.-F. Yale, A. Jain, Canada, Denmark

669 Remission of type 2 diabetes with the oral combo semaglutide + dapagliflozin
M.E. Lunati, V. Cimino, E. Lazzaroni, L. Montefusco, I. Pastore, P.S. Morpurgo, A. Gandolfi, C. Tinari, A. Rossi, G. Zuccotti, P. Fiorina, Italy, USA

670 Safety profile of once-weekly subcutaneous semaglutide in a real-world adult population with type 2 diabetes
J.-F. Yale, A. Major-Pedersen, A.-M. Catarig, R.G. Jain, M. Menzen, P. Holmes, Canada, Denmark, India, Germany, UK

671 Impact of GLP-1 receptor agonist compared to basal insulin start on metabolic targets in patients living with type 2 diabetes and chronic kidney disease (Impact GLP-1 CKD)
Y. Ming, R. Bradley, P. Auerbach, A. Abitbol, Canada

672 Eating behaviour and HbA$_1c$-lowering effects of GLP-1 receptor agonists in Japanese individuals with type 2 diabetes: a multicentre, prospective, observational study

673 Time spent in glucose control after initiating tirzepatide vs comparators: exploratory analysis of fasting serum glucose in SURPASS 1-5 trials

Short Oral Discussion Event A  Tuesday, 12:30 - 13:30
SO 49  Therapies: here, there and everywhere
Chair:  TBA

674 Effects of ghrelin infusion on glucose tolerance and insulin sensitivity after sleeve gastrectomy
M.-L. Dichman, N. Hedbäck, A. London, C. Dirksen, K. Bojsen-Møller, N. Jørgensen, V. Kristiansen, B. Hartmann, J. Holst, M. Svane, S. Madsbad, Denmark
675 The ATTRACTIVE 1 trial: a first-in-human, dose escalating, double-blind, placebo-controlled trial of ATR-258 in healthy and type 2 diabetes participants
E. Waara, B. Pelcman, B. Kalsch, S. Armani, A. Schultz, T. Forst, T. Bengtsson, Sweden, Germany

676 Risk factors of gastrointestinal symptoms in adults with newly diagnosed type 1 and type 2 diabetes
A.-T. Klötzsch, V. Ptushkina, K. Bódis, R. Wagner, M. Roden, O. Kuß, W. Rathmann, Germany

677 Metformin counteracts the adverse metabolic effects of glucocorticoids in healthy subjects
E. Seelig, C. Peterson, T. Delko, V. Iten, M. Epstein, N. Zamboni, M. Kuehne, C. Meyer-Zuern, S. Thierry, Switzerland, UK

678 Possibility of clearing oral glucose test in type 2 diabetes patients who underwent complete remission
M. Ganla, P. Tripathi, N. Kadam, A. Vyawahare, B. Sharma, B. Saboo, India

679 Glucagon-like peptide 1 for lowering plasma glucose in hyperglycaemic subjects with type 2 diabetes: a systematic comparison of intravenous and subcutaneous routes

680 Glycaemic improvement and reduction of insulin use at 48 weeks following the duodenal mucosal resurfacing procedure in people with inadequately controlled type 2 diabetes
B. Sorondo, V. Fonseca, J. Bergman, Z. Saeed, H. Rajagopalan, K. White, H. Zhang, G. Mingrone, USA, Netherlands, Italy

681 Stroke, acute myocardial infarction and mortality in type 2 diabetes: a nationwide comparative effectiveness study of GLP-1RA, SGLT2i and DPP-4i treatment
S. Hastrup, J. Hedegaard, G. Andersen, M. Osler, J. Rungby, S. Johnsen, Denmark
Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 50  Type 1 diabetes

Chair: P. Narendran, UK

682 Factors associated with changes in beta hydroxybutyrate with sotagliflozin in adults with type 1 diabetes
M.J. Davies, S. Boeder, J.B. McGill, R. Pratley, M. Girard, P. Banks, J. Pettus, S. Garg, USA

683 Identifying features of lymphocytes in newly diagnosed type 1 diabetes BANDIT participants after treatment with the JAK inhibitor baricitinib
L. Sanz Villanueva, P. Trivedi, S. Litwak, T. Catterall, M. Waibel, B. Krishnamurthy, H.E. Thomas, T.W. Kay, Australia

684 Adherence affects response to baricitinib in the BANDIT trial in new-onset type 1 diabetes
T. Kay, BANDIT trial study group, Australia

685 Effect of autologous dendritic cell therapy targeting HLA-E restricted CD8+ T regulatory pathway on pancreatic beta cell function in type 1 diabetes
J.L. Gaglia, M. Mackey, H.L. Daley, N.K. Bryant, D. Kim, T. Dong, E.E. Fan, J. Vora, J.S. Skyler, J. Ritz, H. Jiang, USA

686 Dual amylin and calcitonin receptor agonist as an adjunct therapy to insulin prevents weight gain and improve glucose control in an STZ-induced type 1 diabetic rat model
S.A. Melander, A.T. Larsen, M.A. Karsdal, K. Henriksen, Denmark, Swaziland, Switzerland

Short Oral Discussion Event C  Wednesday, 12:45 - 13:45

SO 51  SGLT2 inhibitors: trying new directions

Chair: A. Ceriello, Italy

687 Effect of ertugliflozin on body weight and HbA1c by baseline BMI: observations from VERTIS CV
F. Cosentino, D.Z. Cherney, S. Dagogo-Jack, R.E. Pratley, N. Cater, M. Maldonado, A. Xing, C.P. Cannon, Sweden, Canada, USA, UK
688 Use of sodium glucose transporter 2 inhibitors for diabetes treatment after solid organ transplantation: a case series of 34 patients from a tertiary centre

689 Simultaneous PPAR-γ activation and SGLT2 cotransporter inhibition modulate oxidative stress and apoptosis in diabetes-induced cardiomyopathy
A. Cinakova, P. Krenek, J. Klimas, E. Kralova, Slovakia

690 Effects of sitagliptin versus dapagliflozin on time in range in Japanese patients with type 2 diabetes stratified by body mass index: a sub-analysis of the DIVERSITY-CVR study
K. Takuma, A. Fuchigami, T. Hirose, Japan

691 Dapagliflozin in children and adolescents (age 10-17 years) with type 2 diabetes
N. Shehadeh, P. Galassetti, N. Iqbal, C. Karlsson, J. Monyak, W. Tamborlane, Israel, USA, Sweden

692 Is GFR decline induced by SGLT-2 inhibitor of clinical importance?
M. Günes-Altan, A. Bosch, K. Striepe, M. Schiffer, P. Bramlage, R.E. Schmieder, D. Kannenkeril, Germany

693 Risk of prostatitis in patients with type 2 diabetes: a retrospective database study of canagliflozin vs other antihyperglycaemic agents
Z. Yuan, C. Jeffcoat, R.S. Ali, P. Ryan, A. Sena, M. Schuemie, S. Fonseca, USA

694 Empagliflozin and metformin synergy in proximal tubular epithelial cells: Does the combination alleviates hyperglycaemia-induced metabolic stress?
D. Galuška, L. Pácal, K. Chalásová, K. Kaňková, Czech Republic
Short Oral Discussion Event D   Wednesday, 14:00 - 15:00

SO 52  Targeting muscle, kidney and liver

Chair: K.R. Tuttle, USA

695 Bimagrumab prevents muscle loss associated with low dietary protein intake in healthy volunteers or with weight loss in obesity
L. Coleman, L. Mindeholm, S. Spruill, L. Klickstein, M. Pruzanski, K. Attie, USA

696 Similarity and difference of intestinal actions of metformin and imeglimin
K. Sugawara, H. Mizuma, D. Sasaki, A. Kondo, Y. Watanabe, W. Ogawa, Japan

697 A novel FGF-1 analogue normalises type 2 diabetes, obesity and NAFLD symptoms in ZDF rat model

698 Finerenone increases the likelihood of improved KDIGO risk category in patients with type 2 diabetes and CKD: an analysis from FIDELITY
S.E. Inzucchi, G. Filippatos, S.D. Anker, C. Wanner, T. Shafi, N. Tangri, B. Pitt, R. Weingold, M. Brinker, C. Scott, L. Roberts, P. Rossing, USA, Greece, Germany, Canada, UK, Denmark

699 The novel adrenoceptor agonist ATR-127 targets skeletal muscle and brown adipose tissue to counter diabesity and hepatic steatosis

700 YH40863, a novel long-acting GLP-1xGDF15 dual agonist, elicits potent and sustained body weight reduction and glycaemic control in animal models
701 Impact of finerenone on chronic kidney disease progression in Chinese patients with type 2 diabetes: subgroup analysis of the FIGARO-DKD trial

702 Comparative effectiveness of GLP-1 receptor agonists versus SGLT2 inhibitors in patients with type 2 diabetes and moderate chronic kidney disease
P. Rossing, P. Fioretto, A. Clark, A.B. Jensen, N. Belmar Nazal, K.R. Tuttle, Denmark, Italy, USA

Short Oral Discussion Event E    Thursday, 12:45 - 13:45

SO 53   Miscellaneous: The White Album
Chair:    G. Rayman, United Kingdom

703 Non-adherence to glucose lowering medication contributing to treatment intensification: sub-groups at risk and implications for care

704 Testosterone replacement in men with type 2 diabetes lowers HbA\textsubscript{1c}: ABCD worldwide audit
H. Jones, K. Darzy, R. Troke, U. Dashora, A. Haider, R. Ryder, UK, Germany

705 Oxytocin does not acutely improve glucose homeostasis in men with type 2 diabetes
N. Röhm, N. Moszka, K. Kantartzis, H. Preissl, L. Fritsche, A. Fritsche, M. Hallschmid, Germany

706 Atorvastatin improves glucose metabolism and reverses the diabetic state in a non-genetic mouse model of type 2 diabetes

707 A phase 3 trial to evaluate the efficacy and safety of chiglitazar added to metformin in Chinese patients with type 2 diabetes inadequately controlled on metformin monotherapy
L. Gao, L. Ji, X. Dong, Z. Cheng, X. Zhang, W. Sun, J. Ma, RECAM Study Group, China
708 Alpha-cyclodextrin increases GLP-1 secretion and causes weight loss in mice  
M.M. Smits, L. Von Voss, E.E. Beaman, A.O. Brethvad, J.J. Holst, M. Rosenkilde, Denmark, Netherlands

709 Dulaglutide and glomerular hyperfiltration and albuminuria in youth with type 2 diabetes: results from the AWARD-PEDS study  
P. Bjornstad, S. Arslanian, T. Hannon, P. Zeitler, J. Francis, A. Curtis, I. Turfanda, D. Cox, USA

710 An adiponectin receptor agonist rescues sarcopenia in aged mice  
M. Abou Samra, C.M. Selvais, R. Versele, M.A. Davis-López de Carrizosa, L. Noel, S.M. Brichard, Belgium, Spain

**Short Oral Discussion Event F Thursday, 14:00 - 15:00**

**SO 54 Carbohydrates: time matters**

*Chair* TBA

711 Time-restricted eating and personalised dietary advice induce similar effects on HbA1c over six months in people with type 2 diabetes  

712 Comparative effects of intermittent and continuous enteral feeding on glycaemic control in critically ill patients  

713 Food intake chronotype and its association with 75g-oral glucose tolerance test outcome in pregnant women at risk for gestational diabetes  
S.E. Siegelaar, D.R. Muller, F. Holleman, S.J. Eussen, R.G. IJzerman, M.G. Wouters, R.C. Painter, D.J. Stenvers, Netherlands

714 Effects of early vs late time-restricted eating on 24-hour glucose profiles and internal circadian time in overweight and obese women  
715 Beneficial effects on anthropometric and metabolic parameters in overweight and obese boys after 1 year nutritional-behavioural intervention
F. Folli, M. Tosi, I.A. Matelloni, M. Mancini, A. Andreassi, A. Scopari, A. Rossi, E. Verduci, C. Berra, R. Manfrini, G. Banderali, F. Pecori Giraldi, Italy

716 Gastric emptying of 75g oral glucose is predictive of the glycaemic response to mixed meals as well as oral glucose, but unrelated to antecedent glycaemia in type 2 diabetes
C. Xiang, Y. Sun, Y. Luo, C. Xie, W. Huang, Z. Sun, K.L. Jones, M. Horowitz, C.K. Rayner, J. Ma, T. Wu, China, Australia

717 Gastric emptying is slower in women than men with type 2 diabetes
M. Horowitz, C. Xiang, C. Xie, Y. Sun, K.L. Jones, C.K. Rayner, J. Ma, T. Wu, Australia, China

718 Natural daylight through windows as opposed to artificial lighting during office hours improves glucose control and 24h substrate metabolism in type 2 diabetes patients

Short Oral Discussion Event A  Tuesday, 12:30 - 13:30

SO 55  Nutrition: strawberry fields or glass onions?
Chair:  N. Guess, UK

719 Pre-meal ketones reduce postprandial blood glucose and lipids in individuals with type 2 diabetes
M. Bangshaab, S. Bech Smedegaard, N. Møller, M. Svart, N. Rittig, Denmark

720 Nutritional status and frailty in patients with diabetes and end stage renal failure who are on maintenance haemodialysis
V. Wickramaratne, Sri Lanka

721 Impact of a low-carbohydrate versus a low-fat breakfast on blood glucose control in type 2 diabetes
B.F. Oliveira, C.R. Chang, K. Oetsch, K. Falkenhain, K. Crampton, M. Stork, M. Hoonjan, T. Elliott, M.E. Francois, J.P. Little, Canada, Australia
722 Glycaemic outcomes of short-term diets differing in macronutrient composition in type 1 diabetes
S. Schmidt, K.B. Kristensen, A.G. Ranjan, O. McCarthy, R. Bracken, K. Nørgaard, Denmark, UK

723 A ketogenic diet reduces myocardial fatty acid oxidation but does not affect myocardial oxygen consumption
E. Søndergaard, T.V. Luong, M.G. Pedersen, C.B. Abild, K.M. Lauritsen, M.L. Kjærulff, L. Tolbod, N. Møller, L.C. Gormsen, Denmark

724 Baseline of the REVERSE-IT study, a 24-week and 600-people randomised placebo-controlled study on the metabolic effects of TOTUM-63, a five plant-extract combination

725 Real-world nudging and pricing was insufficient to improve lifestyle and cardiometabolic health: a parallel cluster-randomised supermarket trial
J.W. Beulens, J.M. Stuber, J. Lakerveld, J.D. Mackenbach, Supreme Nudge consortium, Netherlands

726 Food insecurity is common in type 2 diabetes in Bangladesh and associated with diabetes distress and depression
C. Marathe, M. Kamruzzaman, M. Horowitz, K.L. Jones, Australia

Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 56  Devising diabetes devices
Chair: Z. Visockiene, Lithuania

727 Duodenal Jejunal Bypass Liner (DJBL) treatment for type 2 diabetes and obesity: glycaemic and CVD risk factor improvements vs risks among 1068 patients treated worldwide
728 Efficacy and safety of real-time continuous glucose monitoring with remote monitoring for diabetes management in long-term care facilities: a randomised clinical trial
G. Umpierrez, T. Idrees, I. Castro, Z. Zabala, E. Moreno, B. Moazzami, T. Johnson, M. Gavaller, P. Vellanki, L. Peng, R. Galindo, USA

729 Infrared thermography as a non-invasive modality to characterise temperature variations in type 2 diabetics vs healthy controls
P. Jethwani, M. Mittal, H. Kothadia, A.D. Goel, V. Ganakumar, R. Shukla, M.K. Garg, India

730 Endovascular denervation ablates periarterial sympathetic nerves and improves glucose tolerance in a canine model
Z. Wang, G.-J. Teng, China

731 Computational optimisation of insulin release from macroencapsulation devices
L. Trask, R. Tarpey, G.P. Duffy, E.B. Dolan, Ireland

732 Accuracy evaluation of an implantable CGM with chemistry improvements in a 365-day feasibility study
L. Al-Khawi, USA

733 Alleviation of autonomic dysfunction measured as pressure pain sensitivity at the sternum improves empowerment and quality of life in type 2 diabetes: a randomised trial

734 The use of smartwatch data in a closed loop system may reduce the risk of hypoglycaemia during unannounced physical activities
H. Romero Ugalde, S. Pou, A. Adenis, S. Lachal, M. Louis, Y. Pinaroli, E. Huneker, France
**Short Oral Discussion Event C  Wednesday, 12:45 - 13:45**

**SO 57  How to make a good script for insulin therapy for the demanding audience**

*Chair:*  F. Broglio, Italy

**735 Automated insulin delivery tightens glucose control and stabilises circulating endothelial progenitor cells in a 6-months-randomised study**


**736 Use of a one-time loading dose of once-weekly insulin efsitora alfa in phase 2 reduces transient hyperglycaemia and is not associated with excess hypoglycaemia risk vs degludec**

J. Bue-Valleskey, C. Kazda, Q. Zhang, A. Haupt, D. Dahl, J. Frias, USA, Germany

**737 The effect of various degrees of hepatic impairment on the pharmacokinetic characteristics of once-weekly insulin icodec**

J.R. Hingst, B. Cieslarova, A.M. Donatsky, J.R. Joseph, N.R. Kristensen, V. Kupčová, H. Haahr, Denmark, Czech Republic, India, Slovakia

**738 Pharmacokinetic properties of once-weekly insulin icodec in individuals with renal impairment versus normal renal function**

H. Haahr, N.R. Kristensen, J.H. Larsen, F.-D.H. Wagner, S. Ignatenko, Denmark, Germany

**739 Efficacy and safety of fast-acting insulin aspart versus insulin aspart both in combination with insulin degludec with or without metformin in adults with diabetes**


**740 Do people living with type 1 diabetes use the dosing flexibility of degludec and does this depend on patient characteristics?**

Y. Winhofer, A. Kaas, N.N. Knudsen, J.H. Martiny, C. Mathieu, Austria, Denmark, Belgium

**741 Characteristics of priming behaviour among individuals with diabetes using NovoPen 6 in a real-world setting**

P. Choudhary, J. Diogo Da Rocha Fernandes, A. Kaas, M.R. Sørensen, K. Barnard-Kelly, UK, Denmark
742 Real-world utilisation outcomes of shorter warmup and 12-hour grace period in a seventh-generation real-time continuous glucose monitoring system
L. Jepson, J. Welsh, S. Andrade, USA

Short Oral Discussion Event D   Wednesday, 14:00 - 15:00

SO 58   To hell with the hypo
Chair:    M. Malecki, Poland

743 The potential of predicting nocturnal hypoglycaemia for insulin-treated individuals with type 2 diabetes in telemonitoring
T. Kronborg, S. Hangaard, O. Hejlesen, P. Vestergaard, M.H. Jensen, Denmark

744 Hypoglycaemia self-management among adults with diabetes: gaps and leverage points (iNPHORM study, United States)
S. Harris, A. Ratzki-Leewing, J.E. Black, G. Zou, B.L. Ryan, Canada

745 Dasiglucagon corrects postprandial hypoglycaemia in Roux-en-Y gastric bypass-operated individuals
C. Nielsen, C. Øhrstrøm, I. Houji, M. Helsted, L. Krogh, N. Johansen, B. Hartmann, J. Holst, T. Vilsbøll, F. Knop, Denmark

746 Updated frequency of hypoglycaemic coma in children with type 1 diabetes: single centre observation over 25 years

747 Metabolic emergencies in type 1 and type 2 diabetes presenting to a hospital emergency department: frequencies, co-morbidities and mortality outcomes
S.H. Song, B.M. Frier, UK

748 Similar hypoglycaemia duration with once-weekly icodoc versus degludec or glargine U100 in insulin-treated type 2 diabetes: a post hoc CGM analysis from ONWARDS 2 and 4
T. Battelino, B. Ásbjörnsdóttir, L. Carstensen, L.L. Lehrskov, C. Mathieu, A. Philis-Tsimikas, H.S. Bajaj, Slovenia, Denmark, Belgium, USA, Canada

749 Studying the IMPact of nasal glucagon on real-Life Experiences of Severe hypoglycemia Treatment (SIMPLEST) in the German population
A. Holstein, B. Mitchell, E. Moennig, S. Odak, D. McSorley, E. Spaepen, L. Jackson, L. Zografos, Y. Yan, A. Ponce-Ibarra, Germany, USA
750 Food insecurity doubles the rate of severe hypoglycaemia in adults with diabetes: real-world results from the iNPHORM study (United States)
A. Ratzki-Leewing, J.E. Black, B.L. Ryan, G. Zou, S.B. Harris, Canada

Short Oral Discussion Event E  Thursday, 12:45 - 13:45

SO 59  How does AID aid the patients?

Chair: A. Szadkowska, Poland

751 Health outcomes and attribute satisfaction for automated insulin delivery systems in six European countries
T. Bell, E. Lin, E. Cox, T. Bristow, R. Wood, USA

752 Patient reported outcome measures after six months of hybrid closed loop therapy
M. Cegarra Baños, N. Ruano Esteban, N. Balsells Bailon, E. Garcia Aguilera, A. Arqué Badia, A. Pomés Aixut, M. Mateu Amorós, L. Capdevila Torrents, A. Lecube Torelló, M. Hernández García, F. Rius Riu, Spain

753 Improvements in treatment satisfaction with Omnipod Dash insulin management system are durable over 24 weeks in adults with type 1 diabetes

754 Clinical outcomes associated with Omnipod DASH use in the real-world: results from the Association of British Clinical Diabetologists (ABCD) Omnipod Worldwide Audit
N. Hasan, T.S. Crabtree, M. Haq, E. Gatdula, R.E. Ryder, A. Lumb, P. Choudhary, E.G. Wilmot, UK

755 Automated insulin delivery use in adults with type 1 diabetes not meeting glycaemic targets despite treatment with insulin pump and CGM: a randomised controlled trial
M.B. Christensen, A.G. Ranjan, K. Rytter, O.M. McCarthy, S. Schmidt, K. Nørgaard, Denmark, UK

756 Efficacy of open-source automated insulin delivery systems compared with commercial hybrid closed-loop insulin pumps: real-world data from a tertiary center
L. Horváth, M. Mráz, J. Kloučková, D. Vávra, R. Bém, M. Haluzík, Czech Republic
757 Fully closed-loop with ultra-rapid insulin lispro improves glycaemic control compared to pump therapy with CGM in adults with type 1 diabetes: a randomised crossover study
C.K. Boughton, R. Lakshman, S. Hartnell, M. Nwokolo, J. Ware, J.M. Allen, M.E. Wilinska, M.L. Evans, R. Hovorka, UK

758 Why CGM alone is not enough: low actionability of CGM alerts without considering impact of active insulin
M.B. Smith, G. Im, J. MacLeod, R.A. Vigersky, USA

**Short Oral Discussion Event F Thursday, 14:00 - 15:00**

**SO 60** How bright is the hybrid?
Chair: S. Hussain, UK

759 A randomised clinical trial comparing the efficacy of a hybrid closed-loop automated insulin delivery system with a sensor-augmented disposable patch pump in type 1 diabetes
J. Kim, S.-M. Jin, E. Kang, S. Kwak, Y. Yang, J. Yoo, J. Bae, J. Moon, C. Jung, J. Bae, S. Suh, S. Moon, S. Song, S. Chon, J. Kim, Republic of Korea

760 Hybrid closed-loop with ultra-rapid insulin lispro increases time in range compared with standard insulin lispro in adults with type 1 diabetes: a randomised crossover study
R. Lakshman, M. Nwokolo, C.K. Boughton, J. Ware, J.M. Allen, M.E. Wilinska, H. Alwan, M.L. Evans, R. Hovorka, UK, Switzerland

761 Improvement in glucose control after switching to advanced hybrid closed-loop: results from a one year real-word study with Minimed 780G
F. Turchi, M.P. Luconi, B. Ciappini, N. Giorgini, S. Rosati, L. Lanari, E. Tortato, Italy

762 Should people with type 2 diabetes treated by multiple daily injections with home healthcare daily support be switched to a hybrid closed-loop system? The Close AP+ study
Y. Reznik, M. Carvalho, S. Fendri, G. Prevost, L. Chaillous, J.-P. Riveline, H. Hanaire, S. Dubois, H. Pasche, P. Houeto, E. Renard, France

763 Glycaemic improvements with the Omnipod 5 AID System across diverse baseline characteristics: learnings from 320 trial participants ages 2-70 years
L. Leelarathna, T.T. Ly, The Omnipod 5 Research Group, UK, USA
764 Comparison between a first-generation and a second-generation commercial automated insulin delivery system in glucose management among adults with type 1 diabetes

765 Comparison of efficacy of automated insulin delivery, sensor-augmented pumps and insulin pumps without advanced functions in adults with type 1 diabetes
M. Müllerová, R. Bém, D. Vávra, K. Sochorová, M. Haluzík, Czech Republic

766 The MiniMed 780G system adapts to substantial changes in daily routine: lessons from real-world users during Ramadan

Short Oral Discussion Event A Tuesday, 12:30 - 13:30

SO 61 Refining and redefining insulin therapy in type 1 diabetes
Chair: E. Maddaloni, Italy

767 Catheter changes lead to increased hyperglycaemia in both open and closed loop modes: real-life evidence from pump users with type 1 diabetes

768 InPen smart insulin pen plus continuous glucose monitoring (CGM) identifies missed correction opportunities: impact on glycaemia and potential for actionable reminders
R.A. Vigersky, G. Im, M.B. Smith, J. MacLeod, USA

769 Automated insulin delivery systems in adults with type 1 diabetes: A real game changer?
R. Bem, D. Vavra, K. Sochorova, M. Mullerova, M. Haluzik, Czech Republic

770 Safety and performance of an advanced hybrid closed-loop algorithm with ultra rapid lispro and lispro
771 Glucometrics and glycaemic control in adults with type 1 diabetes when switching to insulin degludec
S. Charleer, R. De Groote, E. Lefever, P. Donné, C. De Block, C. Mathieu, P. Gillard, Belgium

772 CamAPS in Poland: the first encouraging experience from two pediatric diabetes centres
P. Jarosz-Chobot, S. Seget, H. Kaminska, E. Rusak, P. Choreza, A. Ochab, E. Ledwon, A. Chobot, Poland

773 Insulin degludec vs glargine U100 in people with type 1 diabetes: Does one size fit all?
S. Hjejle, J.M. Brøsen, R.M. Agesen, B. Thorsteinsson, U. Pedersen-Bjergaard, Denmark

774 The effects of glycaemic markers and insulin resistance on patient-related outcomes in people living with type 1 diabetes
M. Gao, N. Kietsiriroje, S. Pearson, R. Sagar, G. Traviss-Turner, A.J. Hill, R.A. Ajjan, UK, Thailand

Short Oral Discussion Event B Tuesday, 13:45 - 14:45

SO 62 If it is Tuesday, it is time for insulin injection
Chair: S. Di Molfetta, Italy

775 CGM outcomes and hypoglycaemia duration with once-weekly insulin icodec versus once-daily insulin glargine u100 in insulin-naïve type 2 diabetes: ONWARDS 1 exploratory analysis
R. Bergenstal, S. Kehlet Watt, A.S. Matos, I. Lingvay, J.K. Mader, T. Nishida, J. Rosenstock, USA, Denmark, Austria, Japan

776 Improved patient-reported outcomes with once-weekly insulin icodec with a dosing guide app versus once-daily basal insulin analogues in type 2 diabetes (ONWARDS 5)
R. Goldenberg, M. Benamar, L. Carstensen, M. Davies, A.M. Donatsky, E. Franek, M. Kollerer, W. Polonsky, Canada, Denmark, UK, Poland, Germany, USA

777 CGM in insulin-experienced individuals with type 2 diabetes switched to once-weekly insulin icodec versus once-daily comparators in ONWARDS 2 and 4: post hoc analysis
B. Ásbjörnsdóttir, H.S. Bajaj, L.L. Lehrskov, C. Mathieu, A. Philis-Tsimikas, N. Wang, T. Battelino, Denmark, Canada, Belgium, USA, Slovenia
778 Improved glycaemic control with once-weekly insulin icodec with a dosing guide app vs once-daily basal insulin analogues in insulin-naïve type 2 diabetes: ONWARDS 5
H.S. Bajaj, J. Aberle, M. Davies, A.M. Donatsky, M. Frederiksen, D.G. Yavuz, A. Gowda, I. Lingvay, B. Bode, Canada, Germany, UK, Denmark, Turkey, USA

779 Once-weekly insulin icodec: pharmacokinetic and pharmacodynamic properties in type 1 diabetes

780 Improved treatment satisfaction with once-weekly insulin icodec versus once-daily insulin degludec in basal insulin-treated type 2 diabetes (ONWARDS 2)
W. Polonsky, M. Benamar, L. Carstensen, M. Davies, A.M. Donatsky, E. Franek, M. Kellerer, R. Goldenberg, USA, Denmark, UK, Poland, Germany, Canada

781 Once-weekly insulin icodec and hospitalisation: insights from the ONWARDS 1-6 trials
A. Philis-Tsimikas, J.K. Bache, T.J. Bari, K. Salvesen-Sykes, M. Kellerer, USA, Denmark, Germany

782 Improved HbA$_1c$ and time in range with once-weekly insulin icodec versus insulin glargine U100 in insulin-naïve type 2 diabetes: ONWARDS 1
J. Rosenstock, S.C. Bain, A. Gowda, H. Horio, E. Jodar, L.L. Lehrskov, I. Lingvay, R. Trevisan, O. Mosenzon, USA, UK, Denmark, Japan, Spain, Italy, Israel

Short Oral Discussion Event C  Wednesday, 12:45 - 13:45

SO 63  Patient-centered perfecting of insulin therapy
Chair:  K. Strojek, Poland

783 Association of achieving time in range clinical targets among people with type 1 diabetes treated with different insulin modalities

784 Biphasic bolus meal management analysis
M. Louis, A. Adenis, H. Romero-Ugalde, S. Lachal, E. Huneker, France
785 Characterisation of glucose-insulin regulation based on modelling of data obtained exclusively from continuous glucose monitoring systems in patients with type 2 diabetes
D. Herzig, L. Bally, P. Des Courtils, T. Castiglione, A. Jaun, Switzerland

786 Performance of simultaneously used real-time CGM versus intermittently scanned CGM around exercise in type 1 diabetes: an exploratory analysis of the ULTRAFLEXI-1 study

787 Medico-economique approach to the implementation of continuous glucose monitoring for patient hospitalised in a diabetes department
V.M. Pepe, S. Wisniewski, F. Fall-Mostaine, L. Rakotoarisoa, L. Kessler, France

788 Clinical features of type 1 diabetes in older adults and impact of isCGM: association of British Clinical Diabetologist study
H. Deshmukh, K. Adeleke, E. Wilmot, C. Walton, R.E. Ryder, T. Sathyapalan, UK

789 A review of GMI in a cohort of people with and without type 2 diabetes not on insulin: Does HIV serostatus influence the result?
H. Daultrey, T. Levett, J. Wright, N. Oliver, A.J. Chakera, UK

790 Impact of circadian rhythm parameters on type 1 diabetes control

**Short Oral Discussion Event D  Wednesday, 14:00 - 15:00**

**SO 64  Quantifying hypoglycaemia: from mild to mad**
*Chair:* TBA

791 Plasma agouti-related protein concentrations are decreased in individuals with impaired awareness of hypoglycaemia

792 Glycaemic overtreatment, severe hypoglycaemia and all-cause mortality in old adults with type 2 diabetes
Y.-T. Chiu, S.-C. Liu, C.-C. Lee, C.-C. Chen, Taiwan
793 Factors associated with symptomatic hypoglycaemia are different from those for CGM hypoglycaemia in people living with type 1 diabetes: the Hypo-METRICS study

794 How well does sensor-detected hypoglycaemia from short-duration CGM reflect person-reported hypoglycaemia?

795 Recurrent hypoglycaemia induces pro-inflammatory priming of BMDMs and promotes vascular dysfunction in a mouse model of type 2 diabetes and CVD

796 Metabolic adaptations of a hypothalamic neuronal cell line, mHypoA-2/21, in response to recurrent hypoglycaemia
H.J. Merchant, M.J. Ashford, R.J. McRimmon, A.D. McNeilly, UK

797 Concordance between self-reported measures of glycaemic control and hypoglycaemia with continuous glucose monitoring tracing data among adults with type 1 diabetes

798 Quantifying intensity of hypoglycaemia symptoms by diabetes type and hypoglycaemia awareness status: results from the Hypo-METRICS study
**Short Oral Discussion Event E  Thursday, 12:45 - 13:45**

**SO 65  Yin and yang of CGMing**

*Chair:* L. Czupryniak, Poland

799 Treatment satisfaction, patient enablement, and self-rated health among adults with type 1 diabetes changing from finger prick to CGM

L.B. Pedersen, N.D. Ryg, M.S. Aaskoven, C.B. Juhl, K. Schousboe, Denmark

800 Inpatient continuous glucose monitoring vs capillary blood glucose: a cost-effectiveness analysis


801 Comparison of glycaemic metrics from simultaneous use of intermittently scanned and real-time continuous glucose monitoring in patients with type 1 diabetes

A. Siolos, M. Christou, D. Katsarou, P. Christou, C. Zessides, E. Georga, D. Fotiadis, S. Tigas, Greece

802 Randomised controlled trial of real time continuous glucose monitoring in people with type 2 diabetes on insulin (the 2GO-CGM study)


803 Continuous glucose monitoring accuracy during labor and delivery in pregnant women with insulin-treated diabetes

F. Citro, C. Bianchi, M. Aragona, T. Belcari, F. Nicoli, L. Battini, P. Marchetti, A. Bertolotto, Italy

804 Performance of real-time continuous glucose monitoring during 4 weeks of track and field training in adolescents with type 1 diabetes


805 Frequency and impact of sensor measured hyperglycaemia in persons admitted with an infection

J.J. Bakker, A. Van der Vaart, H.R. Bouma, P.C. Choudhary, P.R. Van Dijk, Netherlands, UK
806 Accuracy and reliability of real-time continuous glucose monitoring in the intensive care unit after major abdominal surgery including solid organ transplantation
B. Hagerf, M. Protus, L. Nemetova, M. Mraz, M. Haluzik, P. Girman, J. Franekova, V. Svirlochova, A. Jabor, Czech Republic

Short Oral Discussion Event F  Thursday, 14:00 - 15:00

SO 66  Insulin therapy can be better and cheaper
Chair: D. Dahl, Germany

807 Detection of glycaemic excursions in people with type 2 diabetes treated with gla-100 in primary care through continuous glucose monitoring: the GPDetect study
V. Bellido, C. Morales, A. Soto, A. Serrano, P. Fuentealba, O. Laclaustra, A. Cebrian, Spain

808 Efficacy, safety, and immunogenicity of proposed biosimilar Gan & Lee insulin glargine versus EU-licensed insulin glargine in patients with type 1 diabetes
W. Chen, T. Xie, A. He, L. Li, C. Hao, E.A. Christofides, China, USA

809 Efficacy, safety and immunogenicity of proposed biosimilar Gan & Lee insulin glargine versus EU-licensed insulin glargine in patients with type 2 diabetes
E.A. Christofides, T. Xie, A. He, L. Li, C. Hao, W. Chen, USA, China

810 Effect of descending vs ascending modes in short-term intensive insulin therapy on glycaemic outcome in newly diagnosed type 2 diabetes patients
X. Zhang, Z. Zhang, X. Huang, Y. Li, Z. Huang, China

811 Simplifying insulin treatment in persons with type 2 diabetes over 65 years: interim report of the STOP study
M. De Fano, A. Mazzieri, C.G. Fanelli, F. Porcellati, Italy

812 Efficacy of a basal insulin titration app on glycaemic outcomes in people with type 2 diabetes on an oral-basal insulin regimen: results of an RCT
N. Hermanns, D. Ehrmann, K. Finke Groene, T. Roos, B. Kulzer, Germany

813 Mieres study of continuous glucose monitoring: a good idea for the elderly
814 Incorporating shared decision making in clinical practice to improve adoption of connected insulin pens
O. Ebekozien, O. Odugbesan, N. Xavier, USA

Short Oral Discussion Event A  Tuesday, 12:30 - 13:30

SO 67  Un/successful fitting diabetes in a health care system
Chair: T. Tankova, Bulgaria

815 Application of current HbA1c reference range to premenopausal (<50) women may lead to under diagnosis of type 2 diabetes

816 Clinical and economic burden of severe hypoglycaemic events in patients with type 1 diabetes in the United States: a retrospective comparative cohort claims analysis
A. Boateng-Kuffour, P. Callahan, C. Acosta, K. Chandarana, M. Hull, V.R. Anupindi, X. Zhou, M. DeKoven, R. Beck, USA

817 Outcomes of the multidisciplinary ‘Severe disordered eating in type 1 diabetes (T1DE)’ pan-London service

818 Retrospective controlled study shows intermittently scanned CGM is associated with lower HbA1c and reduced hospitalisation for diabetes events in adults with type 1 diabetes in Sweden

819 Impact of insulin resistance measured by estimated glucose disposal rate on continuous glucose monitoring parameters in type 1 diabetes
M. Parise, A. Cutruzzolà, S. Di Molfetta, S. Lucà, C. Irace, A. Gnasso, Italy

820 By how much does red blood cell status affect the accuracy of HbA1c?
821 Intermittently-scanned CGM is associated with lower HbA1c and reduced hospital admissions for adults with type 2 diabetes on insulin therapy in Sweden: a retrospective controlled study

822 Effectiveness of an HbA1c screening programme for in-patients and its impact on diabetes management in different departments of a large hospital centre in Germany
C. Jacob, A. Staudt, J.-P. Ritz, S. Zimny, H.S. Willenberg, U.D. Lichtenauer, Germany

Short Oral Discussion Event B Tuesday, 13:45 - 14:45

SO 68 Where do the happiest people with diabetes live?
Chair: N. Lalic, Serbia

823 Leveraging geographic data to support diabetes prevention efforts

824 Socioeconomic inequalities in diabetes prevalence in Europe
S. Sidahmed, S. Geyer, J. Beller, Germany

825 Country background, education level, employment and disability in young-onset type 2 diabetes
K. Tibballs, L. Kirkebøen, A. Jenum, J. Straand, E.S. Buhl, Norway

826 Quantifying the benefits of pursuing early and intensive metabolic control in patients with type 2 diabetes in Italy
P. Arietti, K.S. Boye, M. Guidi, J. Rachmann, M. Orsini Federici, R. Raiola, A. Avitabile, W.J. Valentine, Italy, Switzerland, UK

827 Effects of national reimbursement policy supporting test strips on glycaemic control in patients with insulin-treated diabetes: a longitudinal study
S. Cho, S. Kim, R. Oh, Y.-B. Lee, S.-M. Jin, M. Kang, G. Kim, J. Kim, Republic of Korea

828 Regulatory actions to avoid shortage were taken in Sweden when insulin hoarding was observed during the early phase of the COVID-19 pandemic
B. Zethelius, A. Sundström, K. Nordback, K.-M. Kälkner, R. Ljung, Sweden
829 Socioeconomic status as determinant for development of comorbidities in people with type 1 diabetes: a nationwide register study in Denmark from 1998-2018
J.D. Andersen, C.W. Stoltenberg, M.H. Jensen, P. Vestergaard, O. Hejlesen, S. Hangaard, Denmark

830 Consistent performance of the MiniMed 780G system across continents: a world-wide real-world analysis
T. Van den Heuvel, A. Arrieta, J. Castaneda, R. Vigersky, O. Cohen, Switzerland, USA

**Short Oral Discussion Event C Wednesday, 12:45 - 13:45**

**SO 69 “When I’m sixty-four” (low and not-so-young)**

*Chair:* I. Kowalska, Poland

831 The Hypo-RESOLVE QoL: a new patient reported outcome (PRO) to quantify the impact of hypoglycaemia on health-related quality of life

832 Relationships between severe hypoglycaemia and impaired awareness of hypoglycaemia with health status and cognition in adults with type 1 diabetes
E. Sepúlveda, R. Poínhos, D. Carvalho, G. Nata, S.A. Amiel, S.G. Vicente, Portugal, UK

833 Naming hypoglycaemia: a narrative tool for young people with type 1 diabetes and their families
F. Rosário, M. Soares, F. Mesquita, J.F. Raposo, Portugal

834 Anticipated reduction in hypoglycaemia fear and diabetes distress from increasing the glucose prediction of current CGM algorithms
D. Ehrmann, T. Glatzer, N. Babio, L. Priesterroth, B. Olesen, B. Kulzer, N. Hermanns, Germany

835 The use of IDegLira in aged frail people with type 2 diabetes: the STOP study
A. Mazzieri, M. De Fano, C. Fanelli, F. Porcellati, Italy
836 Distinct inflammatory functions of murine BMDMs following exposure to acute vs recurrent hypoglycaemia
J. Kerr, A.D. McNeilly, C. Forteath, J. Deyell, K. Smellie, R. Hall, R. Stienstra, B.D. Galan, M. Evans, U. Pedersen-Bjergaard, B. Thorens, R.J. McCrimmon, UK, Netherlands, Denmark, Switzerland

837 The effectiveness of a light-intensity physical activity intervention on cardiovascular health in people with type 2 diabetes: a randomised controlled trial

838 Impact of COVID-19 measures on body composition differs among age and gender in persons with diabetes
Y. Yamaguchi, Y. Hamamoto, M. Imura, Y. Yamazaki, K. Izumi, R. Usui, H. Kuwata, T. Hyo, Y. Yamada, Y. Seino, Japan

Short Oral Discussion Event D Wednesday, 14:00 - 15:00

SO 70 Will rise of the machines terminate diabetes?
Chair: A. Araszkiewicz, Poland

839 Right patient, right therapy, right time: empowering HCPs and patients: results from the Spotlight-AQ multi-centre randomised controlled trial
R.C. Kelly, H. Price, M. Patel, A. Ali, M. Cummings, E. Barnard, K. Barnard-Kelly, UK

840 Prediction of HbA\textsubscript{1c} response to second-line anti-diabetic agents in type 2 diabetes using machine learning: preliminary results
C.W. Stoltenberg, S. Hangaard, O. Hejlesen, T. Kronborg, P. Vestergaard, M.H. Jensen, Denmark

841 Machine-learning applied to digital retinal images to predict diabetes and hypertension
V.E. Parker, V. Selvarajah, N. Svangard, T. White, F. Wolfhagen-Sand, T. Hegelund-Myrback, M. Majdanska-Strzalka, K. Kaszubska, R. Esterline, UK, Sweden, Poland, USA
842 Evaluation of a clinical artificial intelligence companion for therapeutic decision making in type 2 diabetes management: a retrospective analysis
L. Bally, D. Herzig, C. Piazza, L. Brunswilig, Z. Gabr, Y. Dibner, A. Jaun, Switzerland

843 The efficacy of telemonitoring and integrated personalised diabetes management in people with insulin-treated type 2 diabetes: a preliminary analysis
N. Laichuthai, T. Saetang, P. Greeviroj, S. Thavaraputta, P. Santisitthanon, N. Houngngam, Thailand

844 Impact of Digital Twin app frequency of use on remission and clinical outcomes in type 2 diabetes: results at 18 months of follow up

845 Reductions in hyperglycaemic events following use of a digital diabetes logbook: results of a randomised controlled trial
K. Finke-Groene, N. Hermanns, S. Silbermann, D. Ehrmann, J. Kober, T. Roos, I. Vesper, V. Schäfer, B. Kulzer, Germany, Austria

846 Association between treatment adherence and continuous glucose monitoring outcomes in people with diabetes using smart insulin pens in a real-world setting
T. Danne, N.V. Hartivig, A. Kaas, N.N. Knudsen, J.K. Mader, Germany, Denmark, Austria

**Short Oral Discussion Event E**  **Thursday, 12:45 - 13:45**

**SO 71  Making it all work**

*Chair:* B.H.R. Wolffenbuttel, Netherlands

847 “Stay on top of your diabetes”: A better way to control your diabetes?
A. Nikontovic, D. Juhl Hansen, M. Ørskou Bols, P. Kronholm, H. Ravn Larsen, P. Vestergaard, Denmark

848 Real world evidence of trends in complications and outcomes of diabetic ketoacidosis following implementation of revised Joint British Diabetes Societies’ guidelines
849 Preconception care for women with diabetes most effective in women with type 1 diabetes receiving continuous subcutaneous insulin infusion: a local perspective

850 Economic evaluation of healthcare providers for the management of patients with type 1 diabetes equipped with hybrid closed-loop system in France
R. Scarica, M. Schaller, C. Delval, France

851 Prescribing practices of cardioprotective anti-diabetic medications in marginalised patients
A. Pasha, R.M. Khan, A. Khidhir, T.M. Aladesua, J. Mustafa, G.D. Gudleski, S.Y. Bakhai, USA

852 Impact of a specialised team for diabetes management during hospitalisation in a tertiary hospital in Spain
J. Amigó, O. Simó Servat, A. Ortiz Zúñiga, M. Sanchez, F. Cuadra, M. Dos Santos, M. Lara, C. Hernandez, R. Simó, Spain

853 Diabetes shared value programme in the South African private sector: year two results
N. Bagirathi, C. Pastellides, South Africa

854 Understanding the natural history of people admitted with DKA to facilitate better services and reduced length of hospitalisation: experiences from DEKODE LOS study
A. Gupta, B. Brazier, P. Kempegowda, L. Rengarajan, D. Arshad, D. Zhang, UK

Short Oral Discussion Event F Thursday, 14:00 - 15:00

SO 72 When diabetes goes digital
Chair: L. Laviola, Italy

855 Miniaturised near-infrared spectroscopy device in screening for diabetes
X. Cos, D. Lazaro, J. Salter, P.M. Paldánius, P. Choudhary, Spain, UK, Finland

856 The determinants of using Digital Health Solutions for people living with type 1 and type 2 diabetes in France
P. Cerletti, J. Laurent, N. Hermanns, Switzerland, France, Germany
857 Glycaemia risk index (GRI) uncovers distinct glycaemic variability patterns associated with remission status in type 1 diabetes
X. Li, T. Zhong, X. Li, K. Lei, R. Tang, China

858 Digital Twin-based personalised diet improves glycaemic control in type 2 diabetes: findings from a 6-month randomised controlled trial

859 Evaluation of glucometrics knowledge and its relationship with glycaemic control in people living with type 1 diabetes: Glucometrics study

860 Association between circadian rhythm and daily glycaemic status

861 Describing a 3D innovation in digital diabetes from a tertiary care diabetes centre in India

862 Digital platform for awareness and screening peripheral neuropathy in Thailand: transformation on diabetes management
A. Salaiwarakul, E. Wanothayaroj, Thailand

Short Oral Discussion Event A Tuesday, 12:30 - 13:30

SO 73 More or less likely but still important determinants of diabetes care
Chair: T. Zerekidze, Georgia

863 Attitudes and beliefs regarding use of time in range among diabetes healthcare professionals: early results from an online survey conducted in Canada, UK and USA
A.Y. Cheng, C. De Block, A. Agrawal, G. Anil, J.M. D’Cruz, A. Ginovker, Canada, Belgium, India, USA
864 Trust in sources of diabetes information in six European countries
E. Lin, E. Cox, T. Bell, T. Bristow, R. Wood, USA

865 Socioeconomic gender has an impact on diabetes risk, but not on gestational diabetes risk
T. Gisinger, J. Harreiter, D. Simmons, M. Van Poppel, G. Desoye, A. Kautzky-Willer, Austria, Australia, Netherlands

866 The association between blood glucose levels of children with type 1 diabetes and parental economic status in a mobile health app
W. Zhang, C. Wang, Y. Ding, X. Zheng, S. Luo, China

867 Precision medicine in type 2 diabetes: validation of an treatment selection model for SGLT2-inhibitor and DPP4-inhibitor therapies in people of non-white ethnicity
J.M. Dennis, K. Young, P. Cardoso, R. Hopkins, E. Pearson, A. Hattersley, T. McKinley, A. Jones, B.M. Shields, UK

868 Depression is associated with lower adherence to antihypertensive and lipid-lowering treatment in individuals with type 1 diabetes
R. Lithovius, S. Mutter, E.B. Parente, V. Harjutsalo, P.-H. Groop, Finland

869 Diabetes distress and depression frequently co-exist in people with type 2 diabetes in Bangladesh
J.A. Marathe, M. Kamruzzaman, R.J. Jalleh, M. Horowitz, K.L. Jones, C.S. Marathe, Australia, Bangladesh

870 Clinical benefit of a diabetes management solution for HCPs: a cross sectional analysis across ES, UK, US and BR
N. Orive Milla, D. Radiceska, H. Koenig, Spain, USA, Germany

Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 74   Clinical observations to improve the prediction and progression of diabetic kidney disease

Chair: TBA

871 Machine learning model for predicting worsening renal function using one-year time series data of urinary protein and eGFR in patients with type 2 diabetes
M. Watanabe, S. Meguro, K. Kimura, M. Furukoski, T. Masuda, M. Enomoto, H. Itoh, Japan
872 Glucose variability and recognition of hypoglycaemia in patients with type 1 diabetes and different diabetic kidney disease progression rate
J. Janevica, A. Fedulovs, L. Kruzmane, O. Kucaja, J. Sokolovska, Latvia

873 Genome wide association study of premorbid disease histories converging on chronic kidney disease in individuals with and without comorbid type 2 diabetes from the UK Biobank
M.J. Ennis, P. McClean, P. Shukla, J. Sharman-Soares, S. Watterson, UK

874 Association of physical activity with incident chronic kidney disease among cardiovascular metabolic disease: a prospective cohort study
H. Liu, X. Shao, P. Yu, China

875 Hemoglobin glycation index as a novel risk factor for incident chronic kidney disease
Y. Nakasone, T. Miyakoshi, K. Hirabayashi, H. Koike, K. Yamashita, T. Aizawa, Japan

876 A patatin-like phospholipase domain-containing 3 gene variant associates with progressive kidney disease in diabetes endotypes

877 Exploring the relationship between baseline eGFR and composite renal event rate: a meta-analysis of type 2 diabetes outcome trials
Y. Du, A. Curtis, F.T. Botros, Z. Milicevic, M.C. Bunck, I. Turfanda, USA

Short Oral Discussion Event C Wednesday, 12:45 - 13:45

SO 75 Clinical outcomes and biomarkers in diabetic kidney disease
Chair: N. Panduru, Romania

878 Cardiorenal outcomes among people with diabetes and chronic kidney disease in the French CKD-REIN cohort: influence of the achievement of therapeutic goals at baseline
F. Bonnet, B. Balkau, Y. Diawara, M. Metzger, N. Alencar de Pinho, D. Fouque, B. Stengel, France
879 Platelet aggregation and aspirin response in type 1 diabetes with and without albuminuria

880 Improved prediction of long-term kidney outcomes in people with type 2 diabetes by levels of circulating hematopoietic stem/progenitor cells
G. Fadini, B. Bonora, M. Morieri, M. Marassi, R. Cappellari, A. Avogaro, Italy

881 Clinical profile and kidney function of SGLT2i and GLP-1RA new users with CKD and type 2 diabetes in Denmark: a nationwide population-based study part of the FOUNTAIN platform

882 Need for newer pillars of therapy for reno-protection: pronounced eGFR slope improvement by SGLT2i and GLP-1RA in people with rapid eGFR decline
K. Kashima, H. Shimizu, Japan

883 Effect of dapagliflozin on circulating biomarkers of extracellular matrix remodelling in type 2 diabetes with albuminuria: a randomised clinical trial

884 Urinary Fetuin-A as a candidate biomarker for differentiation of diabetic kidney disease phenotypes in adults with type 2 diabetes
M. Giambalvo, D. Lucchesi, M. Capobianco, G. Mancini, G. Penno, S. Del Prato, M. Garofolo, Italy

Short Oral Discussion Event D  Wednesday, 14:00 - 15:00

SO 76  Diabetic kidney disease pathophysiology from cells to mice, and humans
Chair: L. Gnudi, UK

885 Single-cell sequencing reveals the expression of immune-related genes in macrophages of diabetic nephropathy
X. Shao, H. Liu, P. Yu, China
886 Glucose and fatty acid induced expression and nuclear distribution of mitochondrial ribosomal recycling factor GFM2 accompanied by impaired mitochondrial respiration
M. Zhang, C. Hogstrand, M. Afshan, UK

887 Rab27a promotes diabetic kidney disease progression by affecting m6A levels in renal tubular epithelial cells
D. Wenhui, X. Yaoming, China

888 Renal effects of a novel mitochondrial complex I modulator in a mouse model of type 2 diabetes
A. Aboolian, A. Romero, J. Jha, M. Martin Taboada, A. Cramer, O. Dürrschmidt, C. Granata, N. Saatmann, A. Dai, M. Roden, S. Urner*, K. Jandeleit-Dahm*, J. Meister*, *Co-senior authors, Germany, Australia, Spain

889 Role of ND-13, a DJ-1/Nrf2 pathway activator, in the prevention of inflammasome activation in diabetic nephropathy
S. Cuevas, M. Caballero-Herrero, E. Jumilla, F. Rosique, L. Martinez-Alarcon, L. Andujar, C. Molina, A. Nuñez, L. Hurtado, P. Pelegrin, Spain

890 Mir-34a as a potential marker in diabetic kidney disease
S. Liu, V. Das, W. Ju, V. Nair, L. Goea, D. Delic, F. Burdet, M. Bitzer, C. ‘O’Connor, R.G. Nelson, H.C. Looker, A. Thorenz, M. Kretzler, A. Karihaloo, T. Huber, Germany, Denmark, USA, Switzerland

891 Role of regenerating protein 1a in the progression of UACR in DKD patients
N. Huang, X. Wu, S. Chen, X. Zhu, L. Li, China

Short Oral Discussion Event E Thursday, 12:45 - 13:45

SO 77 New insights to the drivers of diabetic retinopathy progression
Chair: M. Garofolo, Italy

892 Choriocapillaris perfusion correlates with retinal capillary perfusion in all three retinal plexuses in individuals with type 2 diabetes
893 Effects of 32 weeks’ treatment with semaglutide, empagliflozin or the combination on retinal oxygenation, vessel diameter and central retinal thickness
S. Gullaksen, L.V. Hald, S.S. Sørensen, K.L. Funck, L. Petersen, T. Bek, E. Laugesen, P.L. Poulsen, Denmark

894 Evaluation of sitagliptin eye drops in TRPV2+/- rats, a non-diabetic model with diabetic retinopathy-like lesions
H. Ramos Abellán, J. Augustine, B.M. Karan, C. Hernández, A.W. Stitt, T.M. Curtis, R. Simó, Spain, UK

895 Discovering biomarkers for diabetic eye complications by single-cell RNA sequencing
C.B. Brandt, T.S. Voss, L. Petersen, T. Bek, L. Lin, N. Jessen, Y. Luo, Denmark

896 Soluble CD163 and haemoglobin A1c were independently associated with the progression of diabetic retinopathy in adult patients with type 1 diabetes

897 Epicardial adipose tissue volume and retinopathy in people living with diabetes: the Oph-EAT study

898 Are automated insulin delivery systems the best treatment option for adults with type 1 diabetes and retinopathy?
D. Vávra, R. Bem, K. Sochorová, M. Müllerová, M. Haluzik, Czech Republic

899 Rapid reduction of HbA1c and early worsening of diabetic retinopathy: a real-world population-based study in subjects with type 2 diabetes
**Short Oral Discussion Event F**  
**Thursday, 14:00 - 15:00**

**SO 78  Biomarkers and risk factors for diabetic foot disease and peripheral neuropathy**

*Chair:* S. Azmi, UK

**900 Have PAD and microcirculation status impact on the tissue availability of intravenously administered antibiotics in patients with infected diabetic foot (DFIATIM study)?**
V. Fejfarova, R. Jarošíková, J. Kepertová, J. Husáková, V. Wosková, P. Beca, P. Tůma, J. Polák, M. Dubský, D. Sojáková, V. Lánská, M. Petrlík, Czech Republic

**901 Main factors influencing limb salvage in patients with chronic limb-threatening ischaemia after autologous cell therapy**
D. Sojakova, V. Fejfarova, J. Husakova, A. Nemcova, R. Jarosikova, V. Woskova, K. Sutoris, M. Kahle, M. Dubsky, Czech Republic

**902 Surface swaps of diabetic foot ulcers carry a distinct protein biomarker profile compared with healing ulcers**

**903 Advanced glycation end-products as serum biomarkers for diabetic peripheral neuropathy in type 1 diabetes**

**904 Optimising examination-time for functional assessment of small C-fiber function in diabetes utilising the histamine-induced axon-reflex flare response**

**905 Cathepsin C and platelet-derived growth factor receptor A are potential novel biomarkers of distal sensorimotor polyneuropathy: KORA F4/FF4 study**
906 Blood oxygen saturation and associations with autonomic and peripheral neuropathy in diabetes

**Short Oral Discussion Event A**

**Tuesday, 12:30 - 13:30**

**SO 79** Diabetic complications: observational studies from nerves to blood vessels
Chair: D. Selvarajah, UK

907 Cardiovascular risk factors associations with long-term weekly heart rate variability in prediabetes: the ADDITION-PRO study
J.R. Schaarup, L. Bjerg, C.S. Hansen, A. Sandbæk, D. Vistisen, D.R. Witte, Denmark

908 Association of systolic and diastolic blood pressure with the risk of end-stage renal disease in older diabetes patients: a nationwide population-based study
S. Yu, S. Hong, J. Park, K. Han, C. Lee, Republic of Korea

909 Persons with type 2 diabetes without cardiovascular disease but with albuminuria has increased coronary artery pathology

910 Diabetic cardiac autonomic neuropathy: the impact of sleep quality, insulin resistance, chronic inflammation and arterial stiffness
V. Serhiyenko, L. Serhiyenko, A. Serhiyenko, V. Segin, Ukraine

911 Recent trends in neuropathy-related hospitalisations in Romania: a retrospective nation-wide study
C. Bala, A. Rusu, C. Bondor, L. Podariu, I. Bujor, N. Gavan, H. Coman, Romania

912 Mortality from diabetic kidney disease before and during the COVID pandemic
G.A. Lewis, J. Cardwell, K.J. Hardy, UK
Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 80  Beyond the clinical examination: emerging diagnostics in diabetic neuropathy

Chair: V. Lyssenko, Norway

913 Assessment of diabetic peripheral neuropathy in type 1 diabetes using magnetic resonance neurography
S. Croosu, J. Røikjer, S. Tahami, T. Hansen, C. Mørch, J. Frøkjær, N. Ejskjaer, Denmark

914 Soluble urokinase plaminogen activator receptor is associated with cardiovascular autonomic neuropathy in type 1 diabetes
C. Hansen, S. Theilade, J. Eugen-Olsen, S. Lyngbaek, J.L. Jeppsen, T.W. Hansen, P. Rosing, Denmark

915 Association of early sensory deficits identified by QST with dysmetabolism and their relationship with peripheral neuropathy development
Z. Kender, L. Seebauer, L. Schimpfle, E. Von Rauchhaupt, A. Sulaj, H. Bartl, J. Szendroedi, S. Kopf, D. Tsilingiris, Germany

916 Cerebral dopamine receptor engagement and treatment response: a resting-state functional magnetic resonance imaging study in painful diabetic neuropathy
D. Selvarajah, K. Teh, G. Sloan, S. Pallai, S. Tesfaye, UK

917 Abnormal combined DPN-check and Sudoscan results predict all-cause mortality in people with diabetes: the Sheffield prospective study
M. Goonoo, D. Selvarajah, O. Binns-Hall, G. Sloan, J. Walker, S. Tesfaye, UK

918 Neurochemical imaging identifies neuroprotection mechanisms counteracting excitotoxicity and neurovascular changes in the visual cortex of type 2 diabetic animal models
Short Oral Discussion Event C  Wednesday, 12:45 - 13:45

SO 81  Diabetes and the heart

Chair:  J. Skrha, Czech Republic

919 CILP2 deficiency ameliorates diabetes related myocardial injury by regulating inflammation and autophagy via AMPK pathway
L. Hu, K. Li, China

920 Beneficial effects of SGLT2i after acute myocardial infarction are independent of diabetes status: a sub-group analysis of the EMMY trial
F. Aziz, A. Oulhaj, N. Tripolt, P. Pferschy, F. Von-Lewinski, D. Von-Lewinski, H. Sourij, Austria, United Arab Emirates

921 Lower NT-proBNP and higher cardiovascular risk factors in south Asian vs Nordic women 1-3 years after gestational diabetes

922 Hypoglycaemia decreases myocardial work efficiency and increases dyssynchrony in left ventricular segmental contractions in individuals with and without diabetes

923 Associations between arterial basement membrane proteins, clinical characteristics and follow-up events after coronary artery bypass graft operations in type 2 diabetes
A.-S.A. Faarvang, M. Overgaard, P.S. Jensen, L.B. Steffensen, L.P. Riber, L.M. Rasmussen, Denmark

Short Oral Discussion Event D  Wednesday, 14:00 - 15:00

SO 82  Trends in cardiovascular complications

Chair:  J. Snell-Bergeon, USA

924 Coronary artery disease (CAD) in type 2 diabetes and association with social disadvantage: a 50 year perspective

925 Prevalence of heart failure in patients with diabetes: a SwissDiab study
F. Renström, L. Knaus, M. Quarella, M. Buser, M.T. Maeder, M. Brändle, SwissDiab Study Group, Switzerland
926 Temporal shift in heart failure medications prescribed to hospitalised patients with and without diabetes in a large US integrated health system
C. Granowitz, S. Chiu, D. Rider, P. Tseng, J. Mudd, J. Remick, S. Sikirica, A. Carroll, M. Canonico, J. Hsia, M. Bonaca, T.J. Gluckman, USA

927 Comparison of SGLT2 inhibitors versus DPP-4 inhibitors as combination with metformin in patients with acute myocardial infarction with diabetes
Y. Lyu, S. Oh, J. Kim, M. Jeong, S. Kim, Republic of Korea

928 Potential different effects of metformin, empagliflozin and semaglutide against hyperglycaemia-induced cardiac damage: preliminary results of an in vitro study
P. Senesi, A. Ferrulli, I. Terruzzi, L. Luzi, Italy

929 Association of echocardiographic parameters and diabetic foot examination with risk of heart failure and all-cause mortality: a prospective observational study

Short Oral Discussion Event E    Thursday, 12:45 - 13:45

SO 83  Predicting cardiovascular events in diabetes
Chair: C. Guja, Romania

930 Mid-regional pro-adrenomedullin predicts cardiovascular events and mortality in patients with type 2 diabetes independently of subclinical inflammation and organ damage
E. Gauffin, S. Chisalita, J. Engvall, F. Nyström, C. Östgren, Sweden

931 Network analysis of circulating microRNAs reveals novel therapeutic targets in subjects with type 2 diabetes and cardiovascular disease
G.E. Greiço, Z.M. Besharat, A. Mori, S. Trocchianesi, L. Farina, M. Petti, C. Alfano, S. Auddino, M. Bruttini, A. Po, L. Nesti, A. Natali, G. Sebastiani, E. Ferretti, F. Dotta, Italy

932 Acute-to-chronic glycaemic ratio as a mortality predictor in ischaemic stroke
933 Hepamet fibrosis score is associated with an increased risk of non-fatal myocardial infarction in individuals with different degree of glucose tolerance
C.M. Cefalo, A. Riccio, C. Mazzanti, L. Vero, T.V. Fiorentino, E. Succurro, M. Perticone, A. Sciacqua, F. Andreozzi, G. Sesti, Italy

934 Relative contributions of CRP, glycaemia and type 2 diabetes to the risk of cardiovascular events in the general population: observational and Mendelian randomisation studies
M.G. Rolver, F.K. Lemvig, B.G. Nordestgaard, M. Benn, Denmark

935 Formulae to estimate the glucose disposal rate and future coronary artery disease in type 1 diabetes
S. Mutter, E.B. Parente, A. Januszewski, J.R. Simonsen, V. Harjutsalo, P.-H. Groop, A.J. Jenkins, L.M. Thorn, on behalf of the FinnDiane Study Group, Finland, Australia

Short Oral Discussion Event F Thursday, 14:00 - 15:00

SO 84 Macrovascular disease: basic science
Chair: G.A. Rutter, Canada

936 Glyoxalase-1 overexpression attenuates arterial stiffness in a mouse model of diabetes
M.G. Pencheva, E. Berends, K.W. Van der Laan, A. Giudici, J.L. Scheijen, P. Leenders, K.D. Reesink, S. Foulquier, B. Spronck, C.G. Schalkwijk, Netherlands, Australia

937 Pharmacological inhibition of myocardial succinyl CoA:3-ketoacid CoA transferase with pimozide alleviates the progression of diabetic cardiomyopathy

938 Epitranscriptomic analysis of m6A RNA methylation in AGEs-treated human artery endothelial cells (HAECs)

939 The use of plasminogen activator inhibitor-1 specific Affimers as a tool to modulate fibrinolysis and thrombosis risk in diabetes
940 Chronic glucose overflow increases unfolded protein response in GLUT4-overexpressing cardiomyoblasts
B. Stratmann, Y. Mattern, T. Silva de Carvalho, D. Tschoepe, Germany

Short Oral Discussion Event A  Tuesday, 12:30 - 13:30

SO 85  Diabetes, lipids and the vessels

Chair: C. Dibner, Switzerland

941 Lipoprotein(a) a marker for cardiovascular risk stratification in youth with type 1 diabetes
F. Iafrate-Luterbacher, V. Schwitzgebel, Switzerland

942 Possible role of superoxide and nitric oxide in predisposition of female aorta to injury in Zucker diabetic fatty rats: sex specific responses
R. Rahimian, S. Shaligram, F. Akther, X. Han, USA

943 GPR40 agonist, an emerging antidiabetic agent, regulates foam cell formation and endothelial cytotoxicity
H.-J. Hwang, J. Kim, S. Yun, M. Park, E. Song, S. Jang, A. Jang, K. Choi, S. Baik, H. Yoo, Republic of Korea

944 Dapagliflozin induced myocardial flow reserve improvement is not associated to HDL ability to modulate nitric oxide production

945 The mechanism of ferroptosis induced by advanced glycation end products in human aortic endothelial cells and the intervention of GLP-1
K. Hu, L. Tang, H. Zhang, X. Ye, E. Wo, T. Xiang, Y. He, S. Ma, X. Wu, China

Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 86  Diabetic complications from head to toe

Chair: R. Bem, Czech Republic

946 Olfactory dysfunction and diabetic complications in type 2 diabetes
A. Cardella, F. Mozzanica, A. Ferrulli, L. Luzi, Italy
947 Conservative treatments effectiveness on chronic venous disease symptoms and quality of life in patients with type 2 diabetes: results from the Vein Step observational study
T. Feodor, Z. Tazi Mezalec, A.J. Ochoa, J.H. Ulloa, Romania, Morocco, Mexico, Colombia

948 Hands tied: how upper extremity impairments impact work and everyday life of people with type 1 diabetes
S. Wagner, K. Nørgaard, I. Willaing, K. Olesen, H.U. Andersen, Denmark

949 Periodontitis: an underappreciated diabetes-related complication
F. Valentim Bitencourt, G. G. Nascimento, S. Arouche Costa, A. Andersen, A. Sandbæk, F. Renato Manzolli Leite, Denmark, Singapore, Brazil

950 Anti-inflammatory and antibacterial DNA-Ag hydrogel as an antibody delivery system for in situ diabetic alveolar bone rebuilding
L. Peng, C. Wang, W. Li, G. Peng, L. Gou, Y. Zhou, Y. Zhang, China

Short Oral Discussion Event C Wednesday, 12:45 - 13:45

SO 87 Diabetic complications: the heart, the kidney and the bone
Chair: A.K. Mottl, USA

951 Fenofibrate lowers cardiac lipid accumulation and attenuates diabetic cardiomyopathy in db/db mice
S. Moon, C.-M. Oh, J. Yu, Republic of Korea

952 Functional and gene regulatory changes in liver of C57Bl6 mice after chronic stress

953 Circulating metabolites with race free eGFR and risk of kidney disease in individuals with type 2 diabetes: insights from the UK Biobank study
954 The impact of type 2 diabetes and glycaemic control on mortality and clinical outcomes in hospitalised patients with COVID-19 in the capital region of Denmark

955 Comparison of bone mass density and trabecular bone quality in type 1 diabetes patients on multiple daily insulin regimens and with continuous subcutaneous insulin infusion

Short Oral Discussion Event D  Wednesday, 14:00 - 15:00

SO 88  Pathogenic mechanism of diabetic complications
Chair:  P. Novodvorsky, Slovakia

956 Methylglyoxal impairs the pro-angiogenic ability of mouse adipose-derived stem cells (mADSCs) via a senescence-associated mechanism
A. Leone, A. Nicolò, I. Prevenzano, M. Piacente, M. Campitelli, D. Conza, C. Nigro, C. Miele, Italy

957 Haemoglobin glycation index based on continuous/flash glucose monitoring is related to microvascular complications in type 1 diabetes
M. Pehr, V. Navrátilová, E. Horová, M. Prázný, J. Škrha Jr, Czech Republic

958 Cathepsin K as an early marker of cardiovascular organ damage in type 2 diabetes
M. Massimino, G.C. Mannino, G. Monea, M. Rubino, C. Averta, A. Palummo, E. Mancuso, A. Sciacqua, E. Succurro, G. Sesti, F. Andreozzi, Italy

959 Association of endotoxaemia with low grade inflammation, metabolic syndrome and distinct response to LPS in type 1 diabetes
960 The relationship between residual insulin secretion and subclinical cardiovascular risk indices in young adults with type 1 diabetes
A. Garbi, A. Barmpagianni, G. Karamanakos, I.A. Anastasiou, S. Driva, A. Kountouri, M. Bonou, J. Barbetseas, V. Lambadiari, S. Liatis, Greece

Short Oral Discussion Event E
Thursday, 12:45 - 13:45

SO 89 Diabetes: a systemic disease
Chair: S. Carlsson, Sweden

961 Effect of glycaemic control on oral health status in patients with diabetes: analysis using a national survey in Korea

962 Trimethylamine n-oxide and impaired kidney function: a chicken and egg situation
I. Konrade, M. Ozola, E. Liepinsh, M. Dambrova, Latvia

963 The impact of diabetes status on total and site-specific cancer risk in the elderly population: a nationwide cohort study
E.-Y. Lee, J.-S. Yun, K.-H. Song, Y.-B. Ahn, K. Kim, K. Han, S.-H. Ko, Republic of Korea

964 Prevalence, determinants and implications of screen positivity for heart failure (using NTProBNP) in people with type 2 diabetes and hypertension with normal ECG
A. Joshi, D. Dalal, H. Singh, S. Patil, India

965 High mannose correlates with surrogate indexes of insulin resistance and predicts cardiovascular events independently of glycaemic status and traditional risk factors
E. Fortin, B. Campi, E. Ferrannini, A. Mari, L. Mellbin, A. Norhammar, P. Näsman, L. Rydén, A. Saba, G. Ferrannini, Sweden, Italy
Short Oral Discussion Event F  Thursday, 14:00 - 15:00

SO 90  Epidemiology of cardiovascular disease in diabetes: What is new?

Chair:  TBA

966 Impact of previous preeclampsia on preclinical atherosclerosis among women with type 1 diabetes across different risk strata

967 Gender inequalities in cardiovascular history, risk factors and care in type 1 diabetes in Germany and France: the data from DPV and SFDT1

968 Clinical inertia on the management of cardiovascular risk factors in patients with type 1 and type 2 diabetes: data from the AMD Annals
A. Da Porto, R. Candido, A. Rocca, V. Manicardi, P. Di Bartolo, G. Di Cianni, G. Russo, Italy

969 Cardiovascular outcomes of glucose-lowering pharmacological agents in older adults: systematic review and meta-analysis
H. Taleisnik Halimi, T. Cukierman-Yaffe, Israel

970 Assessment of age in established atherosclerotic disease or high/very high risk among patients with type 2 diabetes across the Middle East and Africa: the PACT-MEA study

971 Long-term effectiveness of the national diabetes quality assessment programme in South Korea
K. Ha, J. Huh, S. Han, S. Kwon, G. Kim, B. Kim, D. Kim, Republic of Korea
972 Incidence of stroke and related outcomes in people with type 2 diabetes: a real-world database study in France
K. Mohammedi, I. Sibon, L. Fauchier, N. Quignot, A. Khachatryan, T. Banon, R. Kapnang, K. Kikuchi, H. Ren, C. Massien, L. Vigié, S. Larsen, France, UK, Canada, Denmark

**Short Oral Discussion Event A**

**SO 91 Experimental models of diabetes: related complications**

*Chair:* K. Kankova, Czech Republic

973 Interdependent nuclear co-trafficking of KPNA2 and p53 prevents cardiomyocyte ferroptosis during heart failure with preserved ejection fraction
Y. Luo, F. Ren, H. Tian, K. Zhang, C. Kan, F. Han, N. Hou, X. Sun, J. Zhang, China

974 Oleoylethanolamide mitigates cardiac metabolic alterations secondary to hyperglycaemia and metabolic syndrome induced by high fat diet in C57BL/6J mice
F. Comella, C. Pirozzi, A. Aragón Herrera, A. Lama, C. Annunziata, S. Melini, N. Opallo, R. Meli, M. Lago Paz, G. Mattace Raso, Italy, Spain, Sweden

975 Single-cell RNA sequencing analysis of steroidogenesis and spermatogenesis impairment in the testis of db/db mouse
Y. Hu, B. Ding, J. Ma, China

976 Targeted microRNA profiling reveals that Exendin-4 modulates the expression of several microRNAs to reduce steatosis in HepG2 cells
O. Khalifa, K. Ouararhni, K. Errafii, N. M. Alajez, A. Arredouani, Qatar

977 Insulin prevents palmitate-induced stress kinase activation, autophagy and apoptosis in human cardiac progenitor cells
I. Calderoni, R. D’Oria, C. Caccioppoli, V.A. Genchi, G. Palma, G. Santarpino, A.D. Milano, T. Bottio, A. Leonardini, A. Natalicchio, S. Perrini, A. Cignarelli, F. Giorgino, L. Laviola, Italy
Short Oral Discussion Event B  Tuesday, 13:45 - 14:45

SO 92  Cognitive impairment in diabetes

Chair:  N. Jessen, Denmark

978 Hippocampal impairments in a nongenetic mouse model of type 2 diabetes
M.L. Michalani, R.J. Moreira, M.M. Okamoto, C.Y. Yonamine, U.F. Machado, Brazil, Denmark

979 Astrocytic SCAP deletion attenuates neurodegeneration in the diabetes-associated cognitive dysfunction via astrocyte-neuron crosstalk through C3-C3R signalling
T. Niu, H. Zhang, W. Zhu, K. Liu, S. Wang, China

980 WWOX: the missing link in neurodegenerative-associated pathways in a mouse model of type 2 diabetes
C. Carvalho, S. Cardoso, S. Correia, M. Laranjo, P.I. Moreira, Portugal

981 The effect of dual amylin and calcitonin receptor agonist treatment on spatial memory in rat models of metabolic syndrome
K.E. Mohamed, A.T. Larsen, S.A. Melander, M.A. Karsdal, K. Henriksen, Denmark, Switzerland

982 Clinical characteristics and healthcare utilisation associated with undiagnosed cognitive impairment in elderly patients with diabetes
E. Merzon, M. Shpigelman, S. Vinker, A. Golan-Cohen, I. Green, A.Y. Israel, T. Cukierman-Yaffe, R. Eldor, Israel

983 Glyoxalase 1 overexpression improves neurovascular coupling response and reduces cognitive decline in an animal model of type 1 diabetes
E. Berends, M.G. Pencheva, D.J. Hermes, J.L. Scheijen, R.J. Van Oostenbrugge, S. Foulquier, C.G. Schalkwijk, Netherlands

984 The association of circulating chemerin level with mild cognitive impairment in patients with type 2 diabetes based on resting-state fMRI analysis
X. Yang, W. Wang, Y. Yang, B. Yang, B. Lu, X. Hui, P. Gu, J. Shao, China
**Short Oral Discussion Event C  Wednesday, 12:45 - 13:45**

**SO 93  The Liver: from cell to clinic**

*Chair:* R. Ritzel, Germany

985 Longitudinal intraocular imaging of liver spheroids to uncover novel aspects of liver physiology and pathology  
N. Moruzzi, F. Lazzeri-Barcelo, N. Oliva-Vilarnau, M. Baniol, B. Leibiger, O. Bergmann, V.M. Lauschke, I.B. Leibiger, P.-O. Berggren, Sweden

986 TXNIP contributes to NAFLD and related fibrosis by activating the cGAS-STING-PERK pathway  
W. Deng, Y. Li, D. Liu, China

987 Systematic screening for advanced fibrosis due to NAFLD using transient elastography performed in diabetology: the NAFLD-Care prospective study  

988 Greater hepatic lipid saturation is associated with impaired glycaemic regulation in men with NAFLD but is not altered by six weeks of exercise training  

989 Identifying novel subtypes of non-alcoholic fatty liver disease with distinct risks of hepatic and extrahepatic outcomes: a data-driven cluster analysis  
T. Gu, D. Fang, W. Zhou, Y. Shi, Y. Bi, China

990 Physical activity clusters among persons with type 2 diabetes: a secondary cross-sectional analysis  
I.K. Thorsen, C.G. Durrer, J.C. Brønd, J.S. Nielsen, M. Ried-Larsen, Denmark

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**Short Oral Discussion Event D  Wednesday, 14:00 - 15:00**

**SO 94  Diabetes and NAFLD**

*Chair:* M.A. Nauck, Germany

991 Association between ketogenic capacity and metabolic-associated fatty liver disease in patients with type 2 diabetes  
992 Combined effects of diabetic kidney disease (DKD) and non-alcoholic fatty liver disease (NAFLD) on all-cause mortality and risk of cardiovascular events in type 2 diabetes
M. Garofolo, D. Lucchesi, M. Giambalvo, M. Capobianco, G. Mancini, P. Francesconi, G. Penno, S. Del Prato, Italy

993 Association of thyroid function with nonalcoholic fatty liver disease in recent-onset diabetes

994 Impaired HDL cholesterol efflux capacity in people with type 1 diabetes and non-alcoholic fatty liver disease (prospective InLipoDiab1 Study)
A. Grzelka-Wozniak, A. Uruska, A. Rohatgi, S. Saldanha, J. Flotynska, A. Cieluch, A. Kaczmarek, A. Pypec, D. Zozulinska-Ziolkiewicz, Poland, USA

995 Adaptation of liver sinusoidal endothelial cell metabolism in diabetes-related fatty liver disease
B. Dewidar, M. Ouwens, E. Rohbeck, M. Reina Do Fundo, H. Al-Hasani, M. Roden, Germany

996 The deubiquitinase UCHL1 is downregulated in the liver of men with type 2 diabetes and regulates mitochondrial metabolism
B. Stocks, I. Bradic, E. Näslund, J.R. Zierath, A.S. Deshmukh, Denmark, Sweden

Short Oral Discussion Event E    Thursday, 12:45 - 13:45

SO 95     NAFLD: relevant biomarkers

Chair:    M. Rydén, Sweden

997 A composite blood biomarker including AKR1B10 and cytokeratin 18 performs well in the diagnosis of NASH, advanced hepatic fibrosis, and high-risk NASH
D. Lee, B.-C. Oh, S. Kim, Republic of Korea

998 miRNA-149-5p and miRNA-21-5p contribute to NAFLD progression by regulating hepatic glucose uptake
J. Britsemer, C. Krause, S. Schriever, H. Kirchner, Germany
999 Microrna-34a-5p regulates thyroid hormone metabolism in non-alcoholic fatty liver disease
A.-M. Naujack, J. Mittag, H. Kirchner, Germany

1000 12,13-diHOME ameliorates non-alcoholic fatty liver disease by regulating sestrin2-mediated ampk/ulk1/lipophagy pathway in obese mice
K. Zhang, C. Kan, J. Zhang, F. Han, N. Hou, X. Sun, China

1001 Mechanism of ZBED3 regulating hepatocyte apoptosis in NASH through Bim
Y. Wu, X. Luo, China

1002 Chemerin as a potential biomarker for sex-specific metabolic dysregulation in subjects with NAFLD and diabetes
M.P. Macedo, M.J. Meneses, R.S. Patarrao, H. Shanmungam, P. Portincasa, A. Gastaldelli, J. Raposo, Portugal, Italy

Short Oral Discussion Event F, Thursday, 14:00 - 15:00

SO 96 NAFLD: future treatment
Chair: F. Knop, Denmark

1003 Similar weight loss with semaglutide regardless of diabetes and cardiometabolic parameters in individuals with non-alcoholic fatty liver disease (NAFLD)
M. Roden, T. Okanoue, M. Sundby Palle, A.-S. Sejling, M. Tawfik, M.J. Armstrong, Germany, Japan, Denmark, UK

1004 The effect of 6-month treatment with coenzyme Q10 on endothelial, vascular and myocardial function in patients with non-alcoholic fatty liver disease

1005 Beneficial effects of a curcumin derivative and transforming growth factor-beta receptor I inhibitor combination on non-alcoholic steatohepatitis
C.H. Chung, E.S. Lee, S.H. Jo, K.B. Ha, Republic of Korea

1006 The antipsychotic agent pimozide alleviates non-alcoholic fatty liver disease in experimental obesity
1007 Effects of thermoneutral housing in a mouse model of non-alcoholic fatty liver disease
# Presenting Authors of Orals and Short Oral Discussions

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Satellite Symposia on the Occasion of the 59th EASD Annual Meeting
DPSG SYMPOSIUM

Tue, 3 October 2023   09:00 - 10:30   Chicago Hall

Chair: Katrien Benhalima Belgium

Speaker: Helen R Murphy, UK:
**Pregnancy outcomes of women with early-onset type 2 diabetes**

Fidelma Dunne Ireland:
**Metformin for the management of GDM: Friend or foe?**

David Simmons Australia:
**TOBOGM: Time to screen for GDM in early pregnancy?**
D&CVD SYMPOSIUM

Type 2 Diabetes: novel insights into CV risk prediction and focus of management

Tue, 3 October 2023  11:00 - 13:00  Chicago Hall

Chair: Nebojsa Lalic, Serbia, Jan Škrha, Czech Republic
Paul Valensi, France, Katarina Lalic, Serbia

Speaker: Antonio Ceriello, Milano, Italy:
The relevant role of weight variability in the development of diabetic complication

Eberhard Standl, Germany:
SCORE2-Diabetes – the new gold standard for assessing 10y CV risk of individuals with T2D in Europe?

Oliver Schnell, Germany:
Expanding notions on benefits and harms of diabetes medications: dwellings from a “living” network meta-analysis

Doina Catrinoiu, Romania:
Cardio-Renal-Metabolic Interplay: Emerging Notions and Basic Clinical Treatment Strategies

Mahmoud Ibrahim, USA:
New Interdisciplinary Subspecialty Training in Medicine for Dealing with the Cardio-Renal-Metabolic Challenge in T2D?

Panel Discussion:
Should we move management focus towards the Cardio-Renal-Metabolic focus?

Katarina Lalic, Serbia:
Summary and close
NAFLD SYMPOSIUM

Tue, 3 October 2023 13:30 - 15:30 Chicago Hall

Chair: TBA
Speaker: TBA
IHSG SYMPOSIUM

Has technology solved the problems around hypoglycaemia?

Tue, 3 October 2023  16:30 - 18:30  Chicago Hall

**Speaker:** Simon Heller, UK:
**Introduction**

Julia Mader, Austria:
**Using technology to assess risk**

Michael Rickels, USA:
**Using technology to manage risk**

Michael Riddell, Canada:
**Exercise induced hypoglycaemia: leveraging technology to mitigate risk**

Stephanie Amiel UK:
**Psychoeducational solutions amidst the emergence of new technology**

All speakers:
**Panel discussion**

Simon Heller, UK:
**Closing remarks**
PSAD SYMPOSIUM

Wed, 4 October 2023 09:00 - 11:00 Chicago Hall

Chair: TBA
Speaker: TBA
#dedoc SYMPOSIUM

The patient perspective: What we wish you knew - and why

Wed, 4 October 2023 12:00 - 13:30 Chicago Hall

Chair: B. Hauck, Germany, R. Scibilia, Austria

Speaker: C. Mathieu, Belgium:

Words of welcome
EUDF SYMPOSIUM

From concept to coalition: national responses to the diabetes epidemic

Wed, 4 October 2023 14:00 - 16:00 Chicago Hall

Chair: S. Del Prato, Italy
Welcome and opening remarks, the potential of multi-stakeholder alignment in diabetes

Speaker: A. Consoli, Italy:
Best practice examples: Italian Diabetes Forum

J.-F. Gautier, France:
Best practice examples: Diabetes cooperation in France

C.G. Bala, Romania:
Best practice examples: Romanian Diabetes Forum

F. Nobels, Belgium:
Best practice examples: Belgian Diabetes Forum

J.-B. Gallwitz, Germany:
Best practice examples: Diabetes cooperation in Germany

Panel Q&A: Establishing National Cooperation

C. Mathieu, Belgium:
Closure
PCDE SYMPOSIUM

Wed, 4 October 2023  16:30 - 18:30  Chicago Hall

Chair: TBA
Speaker: TBA
NEUROdiab SYMPOSIUM
Diabetic neuropathy: new perspectives

Thu, 5 October 2023 09:00 - 10:30 Chicago Hall

Chair: Vincenza Spallone, Italy, Solomon Tesfaye, UK

Speaker: Christian Stevns Hansen, Denmark:
Who is at risk? The epidemiology in this new era

Gidon J Bönhof Germany:
How to screen and to diagnose? The compromise of ease and accuracy looking to the future

Shazli Azmi UK:
How to prevent and to treat: multiple targets, multiple tools
DESG SYMPOSIUM

Thu, 5 October 2023  11:00 - 13:00  Chicago Hall

Chair:          TBA
Speaker:        TBA
IDF SYMPOSIUM

Thu, 5 October 2023  14:00 - 15:30  Chicago Hall

Chair: TBA
Speaker: TBA
EGIR SYMPOSIUM

Thu, 5 October 2023  16:00 - 18:00  Chicago Hall

Chair: TBA
Speaker: TBA
INCSG SYMPOSIUM

Fri, 6 October 2023 09:00 - 11:00 Chicago Hall

Chair: Tricia Tan, UK, Fiona Gribble, UK
Speaker: Mette M Rosenkilde, Denmark
Differential Impacts of variants of the GIP and the GLP-1 receptor

Anna Gloyn, USA
Type 2 diabetes risk alleles in Peptidyl-glycine Alpha-amidating Monooxygenase influence GLP-1 levels and response to GLP-1 Receptor Agonists

Ben Jones, UK
Pharmacology of incretin receptor variants: biased signalling and ligand-specific effects

Ralf Jockers, France
Functional rescue of human GLP1R variants with impaired GLP1R cell surface expression and associated with impaired glucose control and increased adiposity
ExPAS SYMPOSIUM

Fri, 6 October 2023 12:30 - 14:00  Chicago Hall

Chair: TBA
Speaker: TBA
Cutting-edge articles on all aspects of diabetes, from basic science through translational work to clinical research

Themed issues on timely topics published annually
Industry Sessions on the occasion of the 59th ANNUAL MEETING OF THE EUROPEAN ASSOCIATION FOR THE STUDY OF DIABETES
## INDUSTRY SYMPOSIA SCHEDULE

**Monday, 2 October 2023**

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<td>Eli Lilly and Company</td>
<td>Deycom</td>
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<td>Boehringer Ingelheim and Eli Lilly and Company</td>
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<td>Novo Nordisk A/S</td>
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<td>17:00 – 17:30</td>
<td>Eli Lilly and Company</td>
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**Thursday, 5 October 2023**

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<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
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<tr>
<td>12:15 – 12:45</td>
<td>Medtronic International Trading Sàrl</td>
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<td>15:00 – 15:30</td>
<td>Bayer AG</td>
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<td>17:00 – 17:30</td>
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**Friday, 6 October 2023**

<table>
<thead>
<tr>
<th>Time</th>
<th>Presenter</th>
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<tr>
<td>10:00 – 10:30</td>
<td>Dexcom</td>
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<td>11:30 - 12:00</td>
<td>Medtronic International Trading Sàrl</td>
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<td>13:00 – 13:30</td>
<td>Wörwag Pharma GmbH &amp; Co. KG</td>
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*All stated times in CEST*

*Status June 2023, details are subject to change.*

The detailed Industry Programme can be found on this website: [www.easd-industry.com](http://www.easd-industry.com)
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Don't miss out on the opportunity to explore this dynamic space, filled with valuable resources and engaging experiences.

**Seating areas and recharge lounge**
Take a moment to relax and recharge in our comfortable seating areas. Whether you need a quick break between sessions or want to network with fellow attendees, these designated spaces provide the perfect opportunity to unwind and refuel.

**Free fruits and coffee**
We believe in keeping you refreshed and energised throughout the day. Enjoy complimentary fruits and freshly brewed coffee, available for your convenience.

**Virtual Meeting station**
Our dedicated Virtual Meeting station allows you to follow the live sessions virtually and access on-demand content, so you won't miss a beat as you explore the industry exhibition.

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**Opening hours**

<table>
<thead>
<tr>
<th>Date</th>
<th>Time</th>
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<tbody>
<tr>
<td>Tuesday, 3 October</td>
<td>09:00 – 16:30</td>
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<tr>
<td>Wednesday, 4 October</td>
<td>09:30 – 16:30</td>
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<tr>
<td>Thursday, 5 October</td>
<td>09:30 – 16:30</td>
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<tr>
<td>Friday, 6 October</td>
<td>09:30 – 15:00</td>
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See you there!

Organised by

INTERPLAN media & service gmbh
MONDAY, 2 OCTOBER 2023
09:00 – 15:35
HAMBURG HALL

THEN AND NOW: 100 YEARS OF MAKING A DIFFERENCE IN DIABETES AND BEYOND

Chairs: Filip K. Knop (DNK), Ania Jastreboff (USA)

09:00 – 09:10 Welcome and introductions
Chairs

09:10 – 09:20 100 years in diabetes history
Stephen Gough (DNK)

09:20 – 09:30 Basal insulin in clinical practice
Vanita Aroda (USA)

09:30 – 09:50 Innovation and basal insulin therapy in T2D
Harpreet Bajaj (CAN)

09:50 – 10:05 Optimising care with basal insulins in T2D
Julio Rosenstock (USA)

10:05 – 10:15 Future of basal insulins in clinical practice
Alice Cheng (CAN)

10:15 – 10:30 Discussion + Q&A
All faculty

10:30 – 10:50 Coffee break sessions

10:50 – 10:55 Welcome back
Chairs

10:55 – 11:05 A journey of innovation: past and future advancement of GLP-1RAs
Michael Nauck (GER)

11:05 – 11:20 Illuminating the interconnection between metabolic disorders and cardiovascular disease
Sue Pedersen (CAN)

11:20 – 11:35 A new wave: advancements with GLP-1RAs in weight management
Jens Aberle (GER)

11:35 – 11:50 Addressing obesity in adolescents: challenges and opportunities for intervention
Aaron Kelly (USA)

11:50 – 12:05 From guidelines to practice: the role of the obesity, T2D and NASH link
Lise Lotte Gluud (DNK)
MONDAY, 2 OCTOBER 2023
09:00 – 15:35
HAMBURG HALL

12:05 – 12:20 Discussion + Q&A
All faculty

12:20 – 13:15 Lunch break sessions

13:15 – 13:20 Welcome back
Chairs

13:20 – 13:35 Can GLP-1RAs be used to achieve effective, early control?
Alice Cheng (CAN)

13:35 – 13:50 Exploring the potential of treatment intensification with
GLP-1RAs
Vanita Aroda (USA)

13:50 – 14:10 Cardiorenal disease: can reducing the risks improve
outcomes?
Francesco Cosentino (SWE)
Katherine Tuttle (USA)

14:10 – 14:20 Putting individuals at the centre of a guideline-based
approach to care
Kamlesh Khunti (UK)

14:20 – 14:30 Discussion + Q&A
All faculty

14:30 – 14:45 Coffee break sessions

14:45 – 14:50 Welcome back
Chairs

14:50 – 15:05 The future of combination therapies
Juan Frias (USA)

15:05 – 15:20 Discussion: Reconstructing the picture from the
cardiometabolic puzzle pieces
Filip K. Knop (DNK)
Ania Jastreboff (USA)
Harpreet Bajaj (CAN)
Francesco Cosentino (SWE)
Lise Lotte Gluud (DNK)

15:20 – 15:30 Future directions for cardiometabolic diseases
Peter Kurtzhals (DNK)

15:30 – 15:35 Meeting close
Chairs

Organised by: Novo Nordisk A/S
iCan, A NEW COMMERCIAL STAGE, INNOVATIVE GLUCOSE SENSOR

Our science to date including USA and Chinese clinical experience.

Organised by: Sinocare Meditech Inc.
EMERGING ROLE OF THE HEPATIC THYROID HORMONE PATHWAY IN THE PATHOPHYSIOLOGY OF NASH

Chair: Michael Roden (GER)

13:30 – 13:35 Introduction
Michael Roden (GER)

13:35 – 13:50 NASH: a growing unmet therapeutic need
Jörn Schattenberg (GER)

13:50 – 14:05 The underestimated role of thyroid hormone pathway in the pathophysiology of NASH
Eveline Bruinstroop (NLD)

14:05 – 14:20 Discussion and Q&As
Michael Roden (GER)
Jörn Schattenberg (GER)
Eveline Bruinstroop (NLD)

14:20 – 14:30 Key take home messages and close
Michael Roden (GER)

Organised by: Madrigal Pharmaceuticals
MOVING BEYOND HBA1C: NEW STANDARDS AND TARGET DESTINATIONS FOR OPTIMIZING GLYCEMIC CONTROL WITH CGM

Organised by: Abbott Diabetes Care
MONDAY, 2 OCTOBER 2023  
15:30 – 17:00  
SOFIA HALL

EXPERT UPDATES ON THE LATEST ADVANCES IN THE DEVELOPMENT OF WEEKLY INSULIN FORMULATIONS

Chair: Rodolfo Galindo (USA)

15:30 – 15:55 Tracking the Evolution of Insulin and the Impetus for Change  
Stefano Del Prato (ITA)

15:55 – 16:15 The Latest Clinical Trial Data of Weekly Insulin Formulations  
Julia Mader (AUT)

16:15 – 16:35 Practical Considerations and Addressing Concerns  
Rodolfo Galindo (USA)

16:35 – 17:00 Question and Answer Session  
All faculty

Organised by: CCO – Clinical Care Options, LLC
SGLT2 INHIBITORS: THE SCIENCE BEHIND MULTI-ORGAN BENEFITS; WHAT’S NEXT?

15:30 – 15:35 Chair welcome and introductions

15:35 – 15:55 Cellular energetics and the positive impact of SGLT2 inhibition

15:55 – 16:15 The science supporting SGLT2 inhibitors renal benefits

16:15 – 16:35 The underlying mechanisms of SGLT2 inhibitors across the ejection fraction spectrum

16:35 – 16:55 SGLT2 inhibitors: Where do we go from here?

16:55 – 17:00 Summary and close

Organised by: AstraZeneca
WHAT IF WE COULD GO BACK IN TIME? OPTIMISING CARE OF PEOPLE WITH CARDIOVASCULAR, RENAL, AND METABOLIC CONDITIONS USING SGLT2 INHIBITORS

Chair: Alice Cheng (CAN)

16:00 – 16:05 Welcome, introduction to faculty and the patient story
Alice Cheng (CAN)

16:05 – 16:10 Turning back time: how could we have intervened earlier in the patient journey?
Nikolaus Marx (GER)

16:10 – 16:20 Discussion: how would your approach differ if the individual had a history of T2D and established CV disease, or HF?
All faculty

16:20 – 16:25 Let's be proactive now! Optimising patient care across the cardiovascular, renal and metabolic spectrum in clinical practice
Pamela Kushner (USA)

16:25 – 16:35 Discussion: considering the importance of cardio-renal protection alongside glycaemic, weight and cardiovascular risk factor management
All faculty

16:35 – 16:40 It's not too late to change your patient's future: implications of recent evidence for cardiovascular, renal and metabolic management
Merlin Thomas (AUS)

16:40 – 16:45 Discussion: how can we reduce future risk of cardiovascular, renal and metabolic complications in people with T2D and established CV disease, or people with HF?
All faculty

16:45 – 16:55 Audience Q&A
All faculty

16:55 – 17:00 Summary and close
Alice Cheng (CAN)

Organised by: Boehringer Ingelheim and Eli Lilly and Company
TRANSLATING DATA INTO INSIGHTS FOR TAILORED VALUE-BASED CARE

**Chairs:** Partha Kar (UK)
Bernhard Kulzer (GER)

16:00 – 16:05 **Introduction**
Partha Kar (UK)
Bernhard Kulzer (GER)

16:05 – 16:30 **How effective is a digital logbook in reducing individual levels of diabetes distress? – Results from the mySugr PRO study**
Dominic Ehrmann (GER)

16:30 – 16:55 **How can connected digital solutions support optimal care provision? – An example from Thailand**
Nitchakarn Laichuthai (THA)

16:55 – 17:20 **How can we put theory into practice in secondary prevention? – Early identification and management of heart failure risk**
Rodica Pop-Busui (USA)

17:20 – 17:30 **Discussion & Closing**
All faculty

Organised by: Roche Diabetes Care GmbH
SHOULD FASTER RAPID-ACTING INSULINS BE THE STANDARD FOR FIRST LINE THERAPY?

Organised by: Eli Lilly and Company
ADDRESSING WEIGHT MANAGEMENT IN PEOPLE WITH TYPE 2 DIABETES

Chair: Rachel Batterham (UK)

12:00 – 12:30 Addressing Weight Management in People with Type 2 Diabetes
Alice Cheng (CAN)

Organised by: Eli Lilly and Company
THE TIME IS NOW: IMPLEMENTING A MULTIDISCIPLINARY APPROACH TO NAFLD/NASH MANAGEMENT

Chair: Lise Lotte Gluud (DNK)

16:45 – 16:47 Introduction
Lise Lotte Gluud (DNK)

16:47 – 16:52 Screening for NAFLD/NASH: the who, when and why now
Lise Lotte Gluud (DNK)

16:52 – 17:07 Integrating NAFLD/NASH management into multidisciplinary care
Lise Lotte Gluud (DNK)

17:07 – 17:14 Q & A
Lise Lotte Gluud (DNK)

17:14 – 17:15 Summary and closure
Lise Lotte Gluud (DNK)

Organised by: Novo Nordisk A/S and ECHOSENS
TRIPLE ACTION IN TYPE 2 DIABETES MANAGEMENT: CANAGLIFLOZIN IN FOCUS

Chair: Stefano Del Prato (ITA)

18:30 – 18:32 General introduction: from active to proactive diabetes management
Stefano Del Prato (ITA)

18:32 – 18:39 Prioritize early glycaemic control
John Wilding (UK)

18:39 – 18:46 Kidney Protection: CREDENCE study under the magnifying glass
David Wheeler (UK)

18:46 – 18:53 Do not forget the heart: Diabetes and Cardiovascular risk management
Petar Seferovic (SRB)

18:53 – 19:00 Approaching Holistic Management in Type 2 Diabetes: Outcomes That Matter
Stefano Del Prato (ITA)

19:00 – 19:28 Panel Discussion
All faculty

19:28 – 19:30 Closing remarks
Stefano Del Prato (ITA)

Organised by: Menarini Group
TUESDAY, 3 OCTOBER 2023
18:30 – 19:30
SEOUL HALL

METFORMIN – FOR NEWBIES AND EXPERTS

Chair: Clifford J. Bailey (UK)

18:30 – 18:33 Introduction
Clifford J. Bailey (UK)

18:33 – 18:50 Why metformin is good at its job
Clifford J. Bailey (UK)

18:50 – 19:07 Make the best of metformin
Nemencio A. Nicodemus (PHL)

19:07 – 19:24 Metformin in the long run
José Silva-Nunes (PRT)

19:24 – 19:30 Questions and answers
All faculty

Organised by: Merck Healthcare KGaA
ERTUGLIFLOZIN IN THE HOLISTIC-PERSON CENTERED APPROACH TO T2DM MANAGEMENT

Co-Chair: Mariana Monteiro (PRT)

18:30 – 18:35 Opening Remarks
Co-Chair

18:35 – 18:45 Ertugliflozin & Glycemic Management in the Holistic-Person Centered Approach to T2DM Management
Sam Dagogo-Jack (USA)

18:45 – 18:55 Ertugliflozin & Weight Management in the Holistic-Person Centered Approach to T2DM Management
Linong Ji (CHN)

18:55 – 19:05 Ertugliflozin & Cardiovascular Risk Factor and Cardiorenal Protection Management in the Holistic-Person Centered Approach to T2DM Management

19:05 – 19:25 Panel Discussion
All faculty

19:25 – 19:30 Closing Remarks
Co-Chair

Organised by: Merck Sharp & Dohme LLC. – a subsidiary of Merck & Co., Inc.
TUESDAY, 3 OCTOBER 2023

A MULTIDISCIPLINARY APPROACH TO T2D, OBESITY, AND CVD:
CURRENT EVIDENCE AND A LOOK TO THE FUTURE

Chair: Ildiko Lingvay (USA)

19:00 – 19:10 Welcome and introductions: CV risk in people with T2D and/or obesity
Ildiko Lingvay (USA)

19:10 – 19:28 The effect of GLP-1RAs on CVD and cardio-renal-metabolic risk factors in patients with obesity and/or T2D
Subodh Verma (CAN)

19:28 – 19:40 GLP-1RAs: What does the future hold?
Nikolaus Marx (GER)

19:40 – 19:58 Panel discussion and Q&A: Multidisciplinary management for optimal patient care
Ildiko Lingvay (USA)
Subodh Verma (CAN)
Nikolaus Marx (GER)

19:58 – 20:00 Closing
Ildiko Lingvay (USA)

Organised by: Novo Nordisk A/S
DIGITAL DIABETES MANAGEMENT: NEW PERSPECTIVES FOR INDIVIDUALISED CARE

Chair: Richard Bergenstal (USA)

15:00 – 15:05 Welcome and introduction
Richard Bergenstal (USA)

15:05 – 15:10 Clinical spotlight in T2D: how digital health can make a difference in diabetes management
Julia Mader (AUT)

15:10 – 15:15 Empowering people with diabetes – the potential of digital titration tools
Susanne Reger-Tan (GER)

Richard Bergenstal (USA)
Julia Mader (AUT)
Susanne Reger-Tan (GER)

15:28 – 15:30 Summary and close
Richard Bergenstal (USA)

Organised by: Novo Nordisk A/S
CONNECTED INSULIN PENS:
REAL WORLD EXPERIENCE

Organised by: Eli Lilly and Company
WEDNESDAY, 4 OCTOBER 2023  18:45 – 19:45
WARSAW HALL

ENHANCING QUALITY OF LIFE THROUGH GLYCEMIC CONTROL:
A PATIENT CENTRIC APPROACH

Chair: Kamlesh Khunti (UK)

18:45 – 18:50  Introduction  
Kamlesh Khunti (UK)

18:50 – 19:05  Glycemic control today, an overview of the state of the art  
Kamlesh Khunti (UK)

19:05 – 19:20  Glycemic control, the cornerstone of the quality of life of 
people living with type 2 diabetes  
Juliana Chan (HKG)

19:20 – 19:35  Impact of various fasting situations on type 2 diabetes  
Mohamed Hassanein (ARE)

19:35 – 19:45  Panel discussion  
Kamlesh Khunti (UK)  
Juliana Chan (HKG)  
Mohamed Hassanein (ARE)

Organised by: Servier Affaires Medicales
WEDNESDAY, 4 OCTOBER 2023
18:45 – 19:45
SOFIA HALL

EASING DIABETES BURDEN IN AN AUTONOMOUS FUTURE

Chair: Jordan Pinsker (USA)
Speakers: Steph Habif (USA)
Alex Constantin (USA)

Organised by: Tandem Diabetes Care
THURSDAY, 5 OCTOBER 2023

TIME TO ACT IN CKD:
FINERENONE AS A PILLAR OF TREATMENT IN T2D PATIENTS

Chair: Lori Berard (CAN)

15:00 – 15:05 Welcome and introduction
Lori Berard (CAN)

15:05 – 15:25 Round table
Time to act in CKD: Finerenone as a pillar of treatment in T2D patients
- Time to act in T2D and CKD
- The Heart of the Matter
- The holistic approach for my T2D CKD patient
Ana Maria Cebrián Cuenca (ESP)
Paola Fioretto (ITA)

15:25 – 15:30 Take home messages
Lori Berard (CAN)

Organised by: Bayer AG
FRIDAY, 6 OCTOBER 2023
13:00 – 13:30
SPOTLIGHT STAGE

DIABETIC POLYNEUROPATHY – WHAT’S NEW IN MULTIMODAL MANAGEMENT?

13:00 – 13:30  Diabetic Polyneuropathy – What’s new in multimodal management?
Dan Ziegler (GER)

Organised by: Wörwag Pharma GmbH & Co. KG
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