Issue 51 Summer 2023

Endocrine Views

Opinion and news from the European Society of Endocrinology

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EDCs: Speaking the scientific truth

In this issue

European Society of Endocrinology

In this issue

Editorial

In this issue, we have embraced several 'hot topics' in endocrinology. One of the hottest, for ourselves and the rest of humanity, must surely be endocrine-disrupting chemicals (EDCs). It is one of the four key areas picked out in the ESE White Paper, and a focus for ESE's policy and advocacy work.

On page 10, you can hear more about ESE's efforts and great successes in this area from ESE Team members Mischa van Eimeren and Dirk de Rijdt. Engagement at the level of the European Parliament and with other organisations is essential in lifting the topic up everyone's agendas. On page 11, Angel Nadal explains the current understanding of the impact of EDCs in our food environment, including what we can and can't say with certainty. Then, on page 12, Niels Skakkebæk and Rune Lindahl-Jacobsen describe how we might determine whether subfertility could be a contributor to falling birth rates.

The second European Hormone Day during ECE 2023 saw the launch of *10 Recommendations for Good Hormone Health*, a public-facing annexe to the 2022 Milano Declaration. The new publication aims to increase people's awareness of hormones' importance in health and disease, particularly in the key areas of EDCs, cancer, obesity and rare disease. You can find out more on page 5.

Does politics interfere with our ability to carry out research? This is the question in the spotlight on pages 8 and 9, where EU Research and Innovation Funding Expert Yulia Matskevich and three of our colleagues from the world of endocrine research share their perspectives. What do you think? How have Brexit and other political activities interfered with your research plans? Please let us know; we want to hear your views.

It is impossible to mention everything that is covered in this issue in the space of a short Editorial, but the last words must welcome our new President Jérôme Bertherat and President-Elect Wiebke Arlt, who took up their new roles at ECE 2023. Find out more about what happened at the Congress on pages 3–5 and 16. Importantly, we also thank outgoing President Martin Reincke. He tells us about his plans for the future on page 7.

Enjoy the read!

Justo P Castaño
Editor, *Endocrine Views*

Areas of interest in this issue:

- Awards
- Diabetes, Obesity, Metabolism and Nutrition
- Endocrine-related cancer
- Environmental Endocrinology
- Events
- Pituitary and Neuroendocrinology
- Publications
- Reproductive and Developmental Endocrinology
- Research

ECE 2023: Turkish delight!

The 25th European Congress of Endocrinology took place in Istanbul, Turkey, on 13–16 May 2023. It was a great success and we thank everyone who attended and contributed. We hope that you enjoyed the fantastic science, the vibrant city of Istanbul, and meeting up with familiar faces and new acquaintances.

You can catch up on ECE 2023 content through ESE On Demand at **www.eseondemand.org**.

3466
attendees
2782 in person
684 online

2203
abstract submissions
1786 clinical
310 basic
107 translational

1846
posters
677 physical
1169 ePosters

My personal highlights

ESE Congress Committee Chair Cynthia Andoniadou shares some of her favourite parts of the Congress.

The room was buzzing for the poster sessions. The enthusiasm to discuss science was evident, particularly among our early career delegates, and the discussions carried on for even longer than scheduled. There was also an excellent turnout at the New Members Welcome Reception. Aided by the tasty mocktails, the conversation and networking were effortless. Everyone stuck fluffy 'Hormone Day buddies' on their clothes, which were colour-coded, so any newcomers sought out and connected with colour-matched delegates.

The EUWIN reception (European Women in Endocrinology) felt very much like a celebration and provided a platform for very efficient networking of women in endocrinology from diverse backgrounds. We have seen a steep increase in women engaging with the EUWIN initiative since, and a lot of enthusiasm to further EUWIN.

A highlight for me was the basic science session on adrenocortical carcinoma pathogenesis, featuring Katie Basham, Pierre Val and Andreas Schedl. The scientific advances presented were incredible and showcased an exceptional use of genetic tools to model disease pathogenesis, across all three talks.

Every plenary lecture was superb, so I will highlight one that surprised me the most: Yutaka Takahashi's talk on autoimmune hypophysitis as part of paraneoplastic syndrome. The work challenged existing dogmas and presented the rare cases showing up across a lengthy period. This led to discovery of the underlying mechanisms: ectopic pituitary-specific antigen expressed by tumours, triggers autoimmunity, leading to cell injury in the pituitary by cytotoxic T-cells. Not obvious to determine!

'The room was buzzing for the poster sessions. The enthusiasm to discuss science was evident.'

Save the Date

ECE 2024 will take place in Stockholm, Sweden, on 11–14 May 2024

Make sure you stay informed

Register your interest at
www.ese-hormones.org/ece2024

Presidential handover at ECE

ECE 2023 marked the end of Martin Reincke's term of office as ESE President, as Jérôme Bertherat took over the role.

On page 7, Martin looks back over the very busy 2 years of his presidency. In the next issue, Jérôme will tell us a little about himself and his vision for the next 2 years. We welcome him to his new role and look forward to working with him as our President.

Martin Reincke (left) with Jérôme Bertherat

New President-Elect and Committee Chairs

We welcome our new President-Elect and new Executive Committee members. Thanks are due to Martin Fassnacht and Simona Glasberg, who are standing down upon completing their terms of office.

Wiebke Arlt

President-Elect

Wiebke is the Director of the MRC London Institute of Medical Sciences and Professor of Transdisciplinary Medicine at Imperial College London, UK. She leads a multi-disciplinary research group investigating steroid metabolism and action in health and disease, and cares for patients with adrenal and reproductive disorders. She is the Editor-in-Chief of *European Journal of Endocrinology* and a founder of European Women in Endocrinology (EUWIN).

Eleanor Davies

Science Committee Chair

Eleanor is Professor of Molecular Endocrinology at the University of Glasgow, UK, where she leads a translational research group investigating aldosterone's role in cardiovascular disease, in particular hypertension and stroke.

Sebastian Neggers

Rare Disease Committee Chair

Sebastian is a consultant in medicine and endocrinology at Erasmus University Medical Center in Rotterdam, The Netherlands. His research spans long term effects of childhood cancer therapy, the treatment of pituitary disease, and metabolic disease.

From the ESE Office

The summer is here, and I have been reflecting on the first half of 2023 and all the activities, events and projects that we have been collectively working upon.

One of my highlights has been the energy and atmosphere at ECE 2023 in Istanbul in May. The warm welcome given to our whole endocrine community by the Local Organising Committee Chair Ayşegül Atmaca and the Society of Endocrinology and Metabolism of Turkey was wonderful. I am sure you will join me in thanking them for an outstanding ECE (even the weather was lovely!).

The second European Hormone Day took place during ECE. The impact generated by the collective activities of so many people to enhance and amplify the campaign was amazing. This included the national societies, patient advocacy groups, corporate partners and partner societies, as well as many individuals. It shows that, by working together, we can raise awareness of the importance of good hormone health: #BecauseHomonesMatter!

The ESE Council of Affiliated Societies (ECAS) session was also memorable. The sobering talk by Boris Mankovsky, President of the Ukrainian Diabetology Association, reminded us that there are still great challenges with the continuance of the war in Ukraine, and that the support of the whole endocrine community has been a great help to them in these challenging times.

We also said goodbye to four of our Executive Committee members, who have each made a substantial impact: Martin Reincke, our President from 2021 to 2023; Simona Glasberg who led our Rare Disease Committee; Lina Paschou, co-Chair of the EYES Committee; and Robin Peeters who led our Clinical Committee. I thank them personally for all that they have bought to the Society. It was fabulous working with them over the last few years and I am glad that they are all still active members on other ESE Committees and projects. We look forward to working with everyone who is taking on a new role.

Four new members of the ESE Team were welcomed to their very first ECE – Louise Downey, Pedro Marques, Srđan Pandurević and Leonie van Hulsteijn. This brings the ESE professional team to 14 members, all working hard to provide the best education, training, journals, events and support for our members and the wider endocrine community.

In the next 6 months, we are delighted to bring back the European Board Examination, which will be held virtually (see page 5). Our many events include a full programme of Spotlights on Science, ESE Talks…, Clinical Updates and Postgraduate Courses – not forgetting the 10th EYES Annual Meeting. See the ESE diary on page 16.

I wish you all a wonderful summer.

Helen Gregson
Chief Executive Officer, ESE
helen.gregson@ese-hormones.org

Keep up to date with ESE on social media

ESEndocrinology | EuropeanSocietyofEndocrinology | esehormones | European Society of Endocrinology

Making a date for hormones

European Hormone Day 2023 took place during ECE in Istanbul. This was the second dedicated hormone awareness day organised by ESE and the European Hormone and Metabolism Foundation (ESE Foundation).

The annual event aims to improve people's understanding of hormones' importance in health and disease, by sharing information and starting conversations, particularly about the four key areas highlighted in the ESE White Paper (see graphic, right).

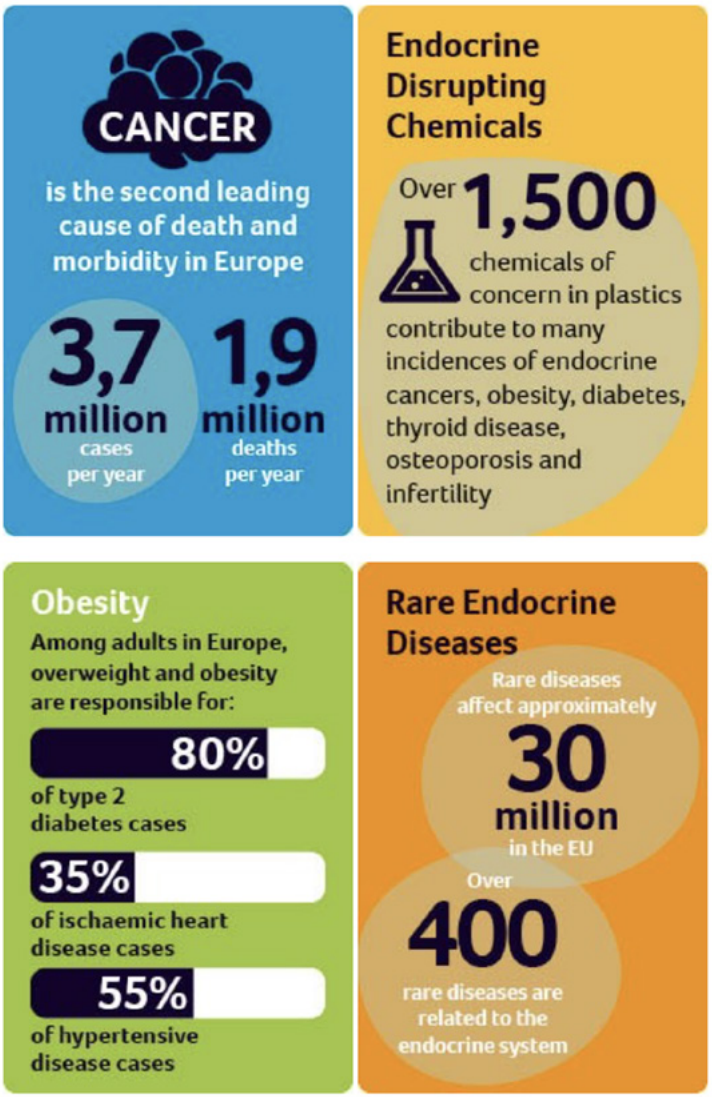
Improved understanding will lead to better European and national health policies – and that means better research, better diagnosis and treatment and, ultimately, better health for all.

European Hormone Day 2023 saw the launch of a new public-facing annexe to the Milano Declaration, called *10 Recommendations for Good Hormone Health* (see **www.ese-hormones.org/media/5090/milano-declaration-2022-annex-i-web-final.pdf**). It includes simple actions that people can take to boost their endocrine health.

To continue the momentum from European Hormone Day, we are also encouraging support for other awareness initiatives with links to endocrinology. ESE and the ESE Foundation, supported by affiliated Patient Awareness Groups, have published *Because Hormones Matter*, a leaflet of awareness-raising initiatives, including a printable calendar of upcoming endocrine-related events.

How can you help?

- Could you distribute or display a poster promoting the ***10 Recommendations for Good Hormone Health?*** See **www.ese-hormones.org/media/5057/10-recommendations-infographic-a2-landscape-v01.pdf**.
- Could you help support other endocrine awareness initiatives? Take a look at ***Because Hormones Matter*** at **www.ese-hormones.org/media/5085/awareness-raising-brochure-web-final.pdf**.
- You can find the **promotional resources from European Hormone Day**, in several languages, at **www.ese-hormones.org/ehd2023-toolkit**.



European Hormone Day
Because Hormones Matter
15 May 2023

Annual Review 2022

Our 2022 Annual Review is now available at **www.ese-hormones.org/annualreview**. Read it to catch up on the many developments in the past year.

Get ready for EndoBridge

This year's EndoBridge meeting takes place on 19–22 October in Antalya, Turkey.

endo bridge 2023
Bridging the World of Endocrinology

The 3-day scientific programme includes lectures by leading experts and interactive sessions discussing interesting and challenging clinical cases across the breadth of endocrinology.

The deadline for submission of clinical cases is 25 August. You can find full details of the programme and online registration at **www.endobridge.org**.

Board exam goes virtual

The 2023 European Board Examination in Endocrinology, Diabetes and Metabolism on 8 November will be held virtually, using remote invigilation. Registration will take place in August. Find more information, including grant application details, at **www.ese-hormones.org/education/european-board-examination**.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Teodor Kovač: an endocrinologist at 100

Vera Popovic met with Serbian endocrinologist Teodor Kovač on his 100th birthday in April, and took the opportunity to ask him about his life and work.


Vera Popovic with Teodor Kovač

It was a great pleasure to speak to Professor Kovač, a legend in endocrinology, when he celebrated his centenary at the Medical Faculty in Novi Sad, Serbia. He was born on 24 April 1923 in New Knezevac in the former Yugoslavia (now Serbia), subsequently obtaining his undergraduate degree in Novi Sad. He and his brother were the only family members to survive the Holocaust, spending the war in prisons and camps in Hungary.

He gained his medical degree at the University of Belgrade and later became Professor of Internal Medicine/Endocrinology at the University of Novi Sad. He founded the Clinic for the Study and Early Detection of Diabetes. As well as being very active in the Serbian Medical Association, he was elected an honorary member of the Hungarian Diabetic Association and was very involved in Jewish organisations from a young age.

Vera Popovic When did you start practising medicine?
Teodor Kovač I studied medicine in Belgrade in 1945–1951, so I started practising in 1951.

VP What led you to pursue medicine?
TK Actually, I wanted to study agriculture as I come from Vojvodina, an agricultural part of the country. However, the Faculty for Agriculture was located across the river. There were no bridges after war and it was far from my lodgings, so my friends suggested medicine and that is how it was.

VP Tell us how you entered endocrinology
TK I practised general medicine for a couple of years and then applied for internal medicine. Unexpectedly, I was taken in by the hospital in Novi Sad, where I was involved in training, clinical rounds, learning. A professor asked me to take care of diabetic patients. I was very lucky to meet Professor Luft from Karolinska Hospital, Sweden, who told us about the progress in medicine in the USA.

At that time we did not measure hormones in the circulation. I witnessed the biggest changes in medical practice with the development of laboratory hormone measurements. This was a great accomplishment in endocrinology and boosted the field.

VP What was your working day like?
TK I had a regular schedule during the week and, truly, I was the first to come and the last to go, just to be sure that all the necessary work was done. I just did my job.

VP You witnessed the evolution of medicine; how did you keep up?
TK I practised with the help of generations who mastered the new technologies. I only stopped at 95, because I lost my sight due to bilateral macular degeneration.

VP Has your attitude towards medicine changed over the years?
TK No, I followed the progress in endocrinology, in the hope that we can more easily solve the challenges and help our patients.

VP Looking back on your career, would you have done anything differently?
TK No, nothing.

VP What kind of hobbies and activities do you have?
TK I loved walking: walking at the weekend for 20–25km in the nearby national park of Fruska Gora. Reading also. As for my dietary habits, everything was modest. My mother was a wonderful cook and dietitian and taught my brother and me to eat everything without exception.

VP What advice do you have for doctors today?
TK Professionally I would say, do not meet your patients with computers, papers, lab results and scanning results. Meet them with conversation – and please examine them. As for personal advice: be humble and live without extremes. If you are the head of the department, you should not be the 'Great Leader' but 'primus inter pares' (first among equals).


Participants at the symposium in Debrecen, Hungary

Romanian-Polish-Hungarian Endocrine Symposium

Participants are pictured at this meeting in Debrecen, Hungary, which took place on 13–14 October 2022, endorsed by ESE and supported by an ESE Small Meeting Grant.

These biannual conferences aim to unify the approach of endocrinologists in Eastern European countries to patient management. The programme, compiled by three societies, spanned many evolving areas of clinical endocrinology. A mini-symposium covered regional aspects relating to endocrine training and healthcare organisations.

Thanks to Miklós Tóth, President of the Hungarian Society for Endocrinology and Metabolism, for this update.

We will aim to promote your ESE-endorsed event(s) in *Endocrine Views*, if you send us details well in advance of the registration deadline.

My diary's still full!

As he completes his term as ESE President, Martin Reincke reflects on 2 years that have been very productive for the Society. Read on to discover his plans in his next role, leading the European Hormone and Metabolism Foundation (ESE Foundation).

What did you enjoy most as President of ESE?

The return to face-to-face meetings after the pandemic! In 2021, after more than 2 years, we had our first in-person Executive Committee meeting in Munich, which was a great experience. Only a few months later, we gathered in Milan for ECE 2022, organised by our Italian friends and colleagues (especially ESE Past President Andrea Giustina). This was such an outstanding event, scientifically and personally. And, finally, the Postgraduate Training Course in Clinical Endocrinology, Diabetes and Metabolism took place in Tbilisi last September, dedicated to our early career endocrinologists. We benefited from a great audience and faculty, and excellent hospitality from our Georgian colleagues, headed by Natia Vashakmadze.

Was your presidency filled with innovation, as you intended?

In 2021, the new Executive Committee began work on a visionary 5-year strategic plan for 2022–2026, to develop ESE as the leading endocrine society within Europe. What followed was like stepping on the gas pedal of a racing car!

Following this blueprint, a remarkable roll-out of exciting ESE projects ensued:

- European Hormone Day and the advancement of the ESE Foundation
- the ESE Academy for the next generation of leaders in endocrinology (launching at the end of 2023)
- new seminar series, such as Spotlight on Science
- the relaunch of the European Board Examination, together with improved digital learning tools
- reorganisation of the Postgraduate Training Course in Clinical Endocrinology, Diabetes and Metabolism
- generation of new income for our Society through new publishing opportunities
- improved service to our members through digital innovation
- joint guidelines with the Endocrine Society and joint educational events with specialised partner societies
- the start of work on the Endocrine Research Roadmap (now called the EndoCompass Project)
- plans for a joint Congress with ESPE in 2025
- European Women in Endocrinology (EUWIN), initiated by prominent female ESE members.

There has been much else besides!

What other achievements were you pleased by?

As you will have seen from the vote for the President-Elect position, our first female President-Elect – and subsequently President – is guaranteed!

This progress is encapsulated in ESE's new 'The Way that We Work' statement:
'We aspire to be visionary, inspiring, engaging and supportive. We are open, transparent and inclusive in everything that we do, and work towards diversity across our activities.'

We know that we can further improve in this area and are working to do so! But I consider this to be one of the most important achievements.

What are the next challenges for ESE and endocrinology?

In my 2 years as President, ESE faced unprecedented challenges. Many of them were externally triggered, such as the pandemic, economic instability, and the terrible war in Ukraine.

Overall, ESE managed remarkably, and we emerged stronger than before. In other words – we definitely passed the stress test. Therefore, I do not see major challenges ahead of us.

What are your plans, as leader of the ESE Foundation?

In the last 5 years, ESE has initiated and strengthened its policy and advocacy activity at the EU level. The support from our more than 50 national societies and partner societies, representing 22 500 endocrinologists, has been impressive. Fighting obesity, endocrine cancers, rare endocrine diseases and endocrine-disrupting chemicals has become a priority for society. I believe we now have a strong public voice, which is heard. The ESE Foundation will be instrumental in making policy and advocacy activity even stronger.

How else will you fill your time, after you step down as President?

My diary is full! I will continue with my passions: playing violin and practising chamber music; running, biking and ski touring; improving care for patients with Cushing's syndrome and primary aldosteronism by (hopefully) top-level translational research; and maybe initiating a start-up.

Do you have any advice to ESE members?

Become President of ESE! It is a secret that it is one of the best jobs in the world. The last 2 years have been among the most interesting of my life. Jérôme Bertherat's best years have now begun, and I wish him success and the same pleasure that I was privileged to experience.

And, if you don't believe me (ESE President=best possible job), then engage in ESE activities. ESE stands for excellence in publishing, patient care, education, research, and policy and advocacy. Plenty of opportunities for everyone. Become an active member!

Finally, I would like to thank everyone I have worked with – our Executive Committee, all the members of our committees and task forces, our Focus Area leads and expert panels, our great professional ESE Team led by CEO Helen Gregson, and all of our members – for making my time as your President so enjoyable and satisfying.

'Engage in ESE activities. ESE stands for excellence in publishing, patient care, education, research, and policy and advocacy. Plenty of opportunities for everyone.'

The Executive Committee and ESE Team presented Martin with a stained glass panel based on 'Die Träumenden Knaben' (The Dreaming Boys) by Oskar Kokoschka, which was made by the father of ESE CEO Helen Gregson

Science: a political bargaining chip?

Yulia Matskevich looks at how the political situation between the EU and the UK is impacting upon current and future biomedical science.

To address growing global challenges, including climate change, an ageing population and the post-COVID recovery, international research collaboration is more necessary than ever. However, this collaboration is not happening in a vacuum and is not immune to the geopolitical environment. It is shaped by politics in numerous ways, via funding agendas, political lobbies and personal researchers' bias, to name just a few.

Brexit and its consequences for researchers and for international research collaboration on both sides of the Channel/la Manche present an example of how the political situation impacts upon current and future developments in science in general, and the areas of health and the life sciences in particular.

As things stand currently, the UK Government is still discussing its association to Horizon Europe with the EU, and it hopes that the negotiations will be successful. The deal between the UK Government and the EU to address issues with trade in and to Northern Ireland has been formally signed off, but it seems that politicians both in the UK and in Europe are still dragging their feet, leaving the research community in limbo.

Three years since Brexit

More than 3 years have passed since the UK officially left the EU, and the damage from this uncertain situation is becoming more and more obvious. For example, the latest statistics from the first 2 years of Horizon Europe showed that participation by UK companies, universities and individuals has fallen by half, despite the funding of £968.8 million provided to UK participants via the Horizon Europe guarantee scheme (data as at 31 March 2023).

Brexit has also had a negative effect on the global talent flows for both the UK and Europe, leading to a higher likelihood of EU-origin researchers leaving the UK and UK-origin researchers returning, as preliminary analysis shows. The life science private sector in Europe – which traditionally relied on international recruitment – is now struggling to fill vacancies. This problem, coupled with the UK's strong track record in the life sciences and healthcare sector, puts Europe in a less competitive position.

©Shutterstock

There are other post-Brexit consequences, which negatively influence aspects of UK–Europe collaboration in this sector, such as the post-Brexit difference in the regulation of clinical trials, the approval of medical technologies, and patenting systems.

Overall, Brexit has had a significant impact on European research and innovation potential, and poses a threat to the EU's position as one of the global leaders in research, as the UK played a major role in building this position. Nevertheless, this situation might be seen as a blessing in disguise, as it also offers an opportunity to change the EU's priorities for its research strategy and for research funding, to mobilise research potential and funding instruments at the level of member states and to extend international co-operation beyond the EU. For example, 15 non-EU countries are currently associated to Horizon Europe, and more agreements are in the pipeline.

> 'Brexit, as an example, opens up a much bigger discussion about the future of global scientific collaboration, heavily influenced by geopolitical shifts of power.'

The wider perspective

Brexit, as an example, opens up a much bigger discussion about the future of science collaboration between the UK and Europe and, indeed, about the future of global scientific collaboration, heavily influenced by geopolitical shifts of power.

The wide knock-on effect of political interference spans university–university partnerships, university–industry collaboration, research collaboration and funding, accompanied by higher levels of oversight at the national or even at the regional level and fear of foreign influence. The USA, Japan, Australia, the UK, Germany and India have increased scrutiny over international research relationships, with China being a major concern.

In this context, what does the future hold for global science collaboration? It is difficult to speculate, but one can envisage various scenarios. An optimistic one is that the world will unite, and politicians will put their differences aside in the face of current global challenges. On the other hand, it is also likely that this 'separatist' trend will continue, leading to reduced public funding for international collaboration and more emphasis given to locally based scientific collaboration.

Zooming in on endocrinology, endocrinological research of the future will be heavily influenced by worldwide development of new biomedical technologies, and driven by global healthcare challenges, such as obesity and ageing. It is clear that both trends require global international collaboration without borders and without politicians sacrificing tomorrow's future for today's political gains.

Yulia Matskevich

ESE has partnered with Dr Yulia Matskevich, an EU research and innovation funding expert, to support ESE members applying for European research funding through the ESE-SEEDER-EU grant programme. Yulia has vast experience of international collaboration, both as a biomedical researcher and as a research manager.

Politics and science: your views

Three endocrinologists offer their perspectives on the impact of Brexit on science in the EU and the UK.

Faisal Ahmed

I am Professor of Child Health at the University of Glasgow, UK, and an honorary consultant in paediatric endocrinology. Since 2019, I have also held an appointment as Professor of Endocrine Registries at Leiden University in The Netherlands. Brexit had a major hand in this!

In academia, people spend their lives mapping out a trajectory for research, collaborations and funding. The three are interdependent. Many of us in the UK and EU had built partnerships and plans of how to use our track records to apply for future research calls. These have been put on hold because of uncertainty and, as academic activity does not cease, many have found other partnerships and will not have time to go back and retrace steps.

If there is real determination for collaboration, academic research finds a way, and this is apparent from my own activities in rare conditions and registries. The EuRRECa project (European Registries for Rare Endocrine Conditions) was launched in 2018 from Glasgow, providing European Reference Networks (ERNs) with the registries they needed. When it was apparent that we were moving towards a 'hard' Brexit, we moved the project to Leiden, with myself remaining at the helm. This has also allowed me to be involved in EU projects and applications. So, Brexit has brought me even closer to Europe than before. But I am in the minority. I know many colleagues in the UK feel further away than before, and while sometimes I feel a bit stuck in the middle, I also feel that I play a vital role in maintaining UK links with activities in the EU, such as the ERNs.

Regarding colleagues in the EU, I think their outlook comes back to a will to collaborate. If there is a will, there is a way. If the will isn't there, then people will find an excuse, and I think Brexit increases the likelihood of those excuses. Successful collaboration requires a genuine, deep understanding of the parties' respective values, which I have personally experienced in abundance in my spheres of work.

In the UK, it is often said that business needs certainty, and it is the same for research. We just need to know where the goalposts are, and we want them to stay in the same place for a while. And then we can plan our trajectories.

Jorge Ferrer

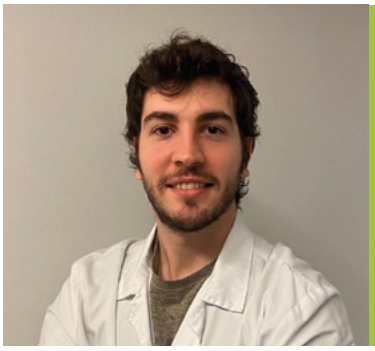
I lead a team in Barcelona's Centre for Genomic Regulation. In 2012, I moved from Spain to Imperial College London, UK, where I was Chair in Genetics and Genomics. I returned to Barcelona 4 years ago, but maintain a position as Professor at Imperial.

Brexit has been a major blow for the scientific community, not just for Europeans in the UK, but for British scientists in the UK and for Europeans interacting with British scientists. Many adverse effects are largely psychological, but still impactful. Academics I know feel strongly that the UK has lost some of its natural attraction for European PhD students and postdocs. Likewise, I think it is harder to attract more established scientists, who traditionally saw the UK as a land of opportunities. Partly, this is due to a subconscious feeling that Europeans are no longer wanted in British society. There are also more concrete concerns about the uncertainty of funding, or the restrictions associated with being part of European networks.

I do not have figures, but the feeling from British colleagues is that the funds previously channelled through EU agencies have not been compensated for. In biosciences, Brexit has also been hugely detrimental to EU–UK collaborations, because it is a nightmare to share reagents.

Personally, Brexit certainly affected my decision to return to Barcelona, although it was part of a more complex decision process, and I have been very happy to continue at Imperial. However, several colleagues left the UK primarily due to Brexit. Fortunately for the UK, the scientific community has strong traditions, and many teams have continued to do well, despite these hardships: others not so much. Hopefully the re-establishment of EU–UK science relations will slowly reverse the trend. But my overall impression is that Brexit has been harmful.

> 'We just need to know where the goalposts are, and we want them to stay in the same place for a while.'



Juan M Jiménez-Vacas

I am a Prostate Cancer UK Postdoctoral Travelling Fellow, who has been working in the Cancer Biomarkers and Translational Therapeutics teams at London's Institute of Cancer Research for 2.5 years.

I honestly believe that the impact of Brexit on the career prospects and research opportunities for postdoctoral researchers in the UK has been relatively mild. My career has not been significantly affected, partly because my work is supported by a UK charity, so my funding and research have continued. Some of the reagents I use come from EU countries, and have taken longer to arrive, due to extra bureaucracy. Other than that, I do not think that my work has been significantly impacted by Brexit.

One of my supervisors has mentioned several times that recruiting staff from other countries has become more difficult, due to factors such as visa requirements. Thanks to the support of the Institute of Cancer Research, he has been able to build a group of skilled international researchers. He has continued to collaborate with exceptional researchers from around the world, despite the ongoing uncertainty about the relationship between the UK and the EU.

Regarding the perspective of EU scientists, I have had many conversations with a former PhD supervisor in Spain, who continues to mentor me. He relates that the Brexit situation has created challenges for planning and funding, particularly for collaborative projects involving UK-based institutions and other European partners.

Moving endocrine disruptors up the agenda

ESE's policy and advocacy work seeks to increase awareness of endocrine-disrupting chemicals (EDCs) and their impact.

Among ESE's four policy and advocacy priorities set out in the 2021 White Paper (**www.ese-hormones.org/whitepaper**), EDCs have been our main focus at the EU level over the past 5 years. There is a packed legislative agenda in this area, and strong interest among EU decision makers.

Engaging at the EU level has enabled ESE to build a strong network of Members of the European Parliament (MEPs), European Commission officials, representatives of member states, other medical societies and a variety of non-governmental organisations active in health and the environment. These connections have proven vital in achieving key successes.

Shaping EU resolutions

For example, we worked with MEP contacts around the European Parliament resolution of 10 July 2020 on the Chemicals Strategy for Sustainability.[1] ESE's suggestions, calling on the European Commission for better testing methods to identify EDCs, were accepted and integrated into the final text of the resolution.

We also influenced the European Parliament resolution Strengthening Europe in the Fight Against Cancer adopted in February 2022.[2] With the support of several MEPs, important messages around the rise of endocrine cancers and the links between EDCs and cancer were integrated into the final text.

This has helped, and will continue to help, ESE and the broader endocrine community to ask for more attention and research funding for these key endocrine topics.

ESE EDC Working Group

ESE's efforts in this area are guided by our long-standing EDC Working Group (**www.ese-hormones.org/advocacy/eses-advocacy-activities/endocrine-disrupting-chemicals**), chaired by Josef Köhrle (Germany).

The Working Group has actively engaged with the EU, as well as with some national debates, in several ways:

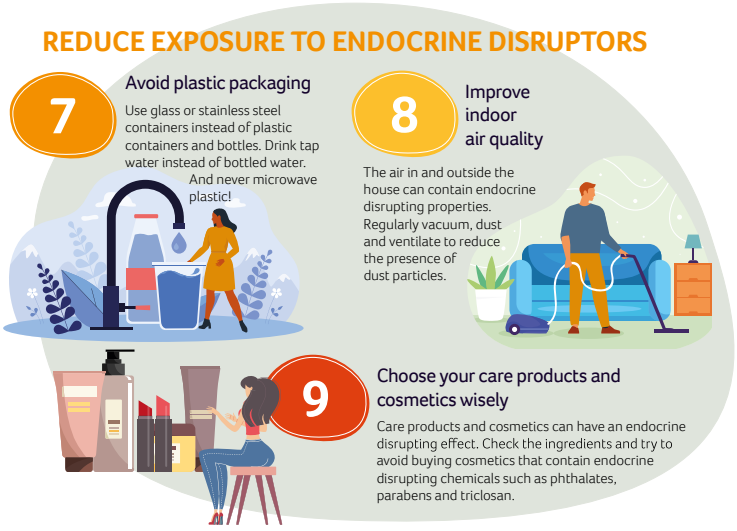
- by providing scientific input to a wide variety of consultations
- by organising or contributing to stakeholder events
- by reaching out to MEPs and European Commission officials.

ESE has also maintained a constant presence in the programme of the Annual Forum on Endocrine Disruptors organised by the European Commission.[3]

Working with others

To amplify our voice within the heated EU debate around EDCs and to counter the strong industry lobby in this area, ESE has worked closely with the Endocrine Society, the European Society for Paediatric Endocrinology and the European Thyroid Association.

'With our partners, ESE is working towards an environment where decision makers are familiar with the terms "endocrinology" and "hormones".'



EDCs feature as points 7–9 in *10 Recommendations for Good Hormone Health*, launched on European Hormone Day (see page 5)

Together, in the past year, these leading scientific societies have focused on ensuring a timely and ambitious proposal regarding REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals), which is the 'umbrella' for all EU legislation on chemicals. A wide-ranging revision of this legislative file is pivotal to reducing harmful exposure in Europe and beyond. In March 2023, ESE co-ordinated a petition[4] within the European endocrine community to ask the European Commission for prompt publication of the REACH revision, so that it may be accepted under the current mandate of the European Commission and Parliament.

A wider context

ESE also engages with other debates that are important to endocrinology, often in collaboration with others. Example of relevant legislative dossiers include the European Health Data Space, the *In Vitro* Diagnostic Medical Devices Regulation and the European Health Technology Assessment. For some of these debates, we work under the umbrella of the BioMed Alliance (**www.biomedeurope.org**), of which ESE is an active member.

Together with our partners, ESE is working towards an environment where decision makers are familiar with the terms 'endocrinology' and 'hormones', and understand their wider implications for European public health. European Hormone Day (**www.europeanhormoneday.org**), launched during ECE 2022 in Milan, is instrumental in achieving this aim.

A collective effort is necessary for endocrinology to rise up the European health agenda and receive the attention it deserves in terms of European and national policies, legislation and public awareness.

Together with all our members, ESE and our partner organisations must continue reaching out to decision makers at all levels, to explain *why hormones matter*. Only then will the European endocrine community thrive in the competitive environment that is Europe.

Mischa van Eimeren EU Liaison Officer, ESE
Dirk de Rijdt Director of Strategic Partnerships, ESE

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EDCs and metabolism: 'diabesity'

Evidence suggests that endocrine-disrupting chemicals (EDCs) may have a significant role in metabolic disease.

It is globally accepted that there is a worldwide epidemic of obesity and diabetes, with a prevalence that continues to increase year after year. Obesity and diabetes are interrelated pathologies, with obesity being responsible, in an important way, for the increase in the prevalence of type 2 diabetes.

Both diseases have aetiologies that include genetic and environmental factors. Genetic influences do not explain the change in global prevalence over the last few decades and, therefore, we must look to the environment. Exposure to EDCs is emerging as a serious environmental factor in the aetiology of these diseases.

Our current understanding

Enough epidemiological, animal and cellular studies have accumulated over the last 20 years for us to seriously consider that exposure to EDCs may be a risk factor for both pathologies.[1]

Exposure to these compounds occurs by ingestion, through the skin and through the air, and has been steadily increasing over the past 50 years. Certainly, the food environment must be key in the increase in obesity, i.e. access to hypercaloric, cheap and generally ultra-processed foods. What is not often considered is that this type of food represents an exposure to EDCs.[2]

The results of the Human Biomonitoring for the EU (HBM4EU) project (**www.hbm4eu.eu**) indicate that the EU population is exposed to EDCs that are known to be obesogenic and/or diabetogenic. Experiments in animal and cellular models indicate that low doses of individual EDCs, similar to those in human exposure, target every organ involved in energy balance. EDCs modify the gene expression and biosynthesis of key enzymes, hormones and adipokines, including insulin, leptin and adiponectin, which are essential to control energy homeostasis. This is likely to create a situation in which, potentially, the different EDC combinations to which each of us is exposed will alter energy homeostasis, resulting in diverse metabolic phenotypes with different degrees of adiposity that will be difficult to predict.[1,3] Accordingly, exposure to EDCs may play an important role in explaining the increase in the prevalence of obesity, as well as in individual variability caused by gene–environment interactions.

Some EDCs directly alter pancreatic β-cell functional mass and insulin sensitivity in peripheral tissue and, therefore, they should be considered diabetogenic.[4,5] There is epidemiological evidence linking exposure to persistent organic compounds, bisphenols and heavy metals with type 2 diabetes. New longitudinal epidemiological studies and experiments in rodents and cells indicate that the association may be causal.

The effect of EDCs can happen at any time during our lifetime, but there are some periods of life in which exposure represents a greater hazard. It is well accepted that the fetal period and infancy represent the major window of susceptibility for offspring to develop metabolic disorder later in life.[1] What is even more worrying is that, in mice, the effects of EDCs on obesity are transgenerational, affecting up to at least the fourth generation.[6] It should be noted that pregnancy represents a window of susceptibility, not only for the offspring but also for the mother, to develop metabolic disorders sometime after delivery.[7]

What we can say

Knowing the current knowledge and the weight of evidence, we can state emphatically that:

- There are sufficient experimental data from animal models to affirm that doses similar to human exposure of EDCs cause obesity and/or alterations in functional β-cell mass and insulin resistance. In animal models, EDCs are obesogenic, diabetogenic, or both.
- There are epidemiological studies, including some important longitudinal ones, that allow serious suspicion that EDC exposure poses a risk for both diseases.

'What is not often considered is that [ultra-processed food] represents an exposure to EDCs.'

What we cannot say

In view of the data we should not say:

- That the importance of EDC exposure is insignificant compared with diet or lack of exercise. We do not know how important EDC exposure is compared with other environmental factors. The latter is an important point that needs to be addressed.
- Human exposure will never be high enough to pose a risk. There are strong data showing effects at low doses similar to current human exposure. Biomonitoring indicates that most of the population is exposed to low doses of a wide variety of contaminants, many of them suspected EDCs.

Direction of current work

The number of groups working worldwide on EDCs and metabolic disorders has grown exponentially in the last decade. Therefore, a flurry of new results and hypotheses is expected in the coming years.

Importantly, the European Commission is aware of the concern that EDC exposure poses to human health, and the need to develop new testing methods to identify EDCs that can lead to obesity and diabetes. Ongoing work under the EU-funded Horizon 2020 projects GOLIATH, OBERON and EDCMET (**www.eurion-cluster.eu**), which will be completed next year, should accelerate the development of screening protocols to identify metabolism-disrupting chemicals.

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Subfertility: a role in declining birth rates?

Fertility rates are falling, and research is needed to determine whether subfertility and the related endocrinology have a role.

Many industrialised regions face a reproductive crisis, with fertility rates well below the sustainability level (2.1 children per woman) for years. In countries where industrialisation was well underway in the early 20th century, e.g. Japan, there are now more deaths than births. Elsewhere, where birth rates dropped below the sustainability level more recently, population decline has not yet occurred. However, the changing reproductive pattern is already noticeable in the form of societal problems with an increasing 'burden of elderly people' and a lack of younger people in the workforce.

Demography (the statistical study of human populations) is of enormous value to governments in economic planning and legislation. A common interpretation of demographic data is that the changing social and economic roles of women in our industrialised societies are to be blamed for the unsustainable reproductive pattern.[1,2]

We agree that economic and socio-psychological factors are fundamental to people's plans to have children. However, many pregnancies are unplanned, showing that fecundity of people of reproductive age is still important for the number of births, in a time with effective contraception.

Surprisingly, many authors of demographic scientific papers and the media seem to ignore that population fecundity is far from constant. The World Health Organization recently reported that globally, one person in six is infertile, making infertility the most prevalent non-communicable disease among people of child-bearing age.[3] There is even strong evidence that reproductive health problems are increasing and may be interconnected, e.g. increasing incidences of testicular germ cell cancer, decreasing semen quality, increasing incidence of undescended testis and widespread infertility and a need for assisted reproductive technology.[4,5]

A need for multidisciplinary research

As medical scientists, we know better than anybody that the desire to have children is not enough to start a family. Good sperm and egg cells are fundamental for conception and pregnancies that go to term. Infertility is widespread and difficult to study, as both male and female factors can play a role, and it may often be caused by double pathology.

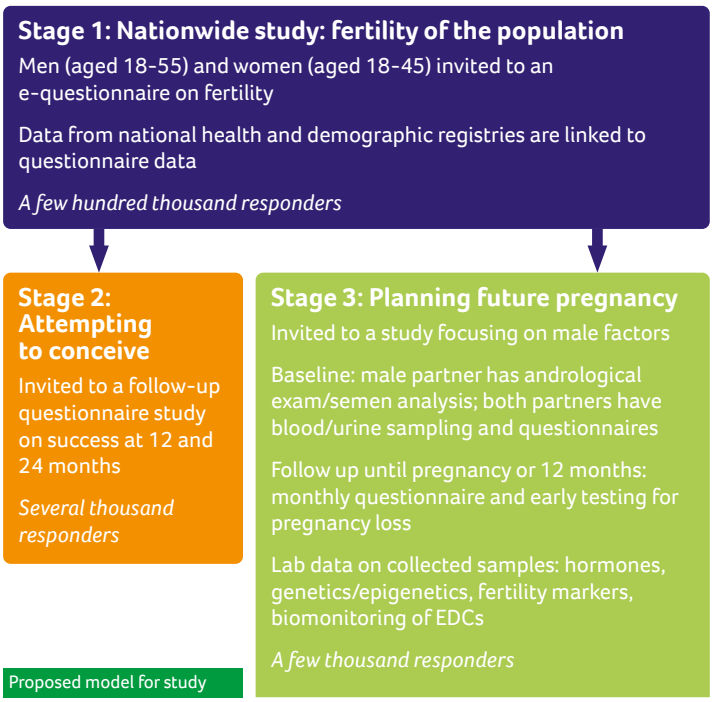
Thus, a huge multidisciplinary approach is urgently needed, to distinguish and quantify the contribution of biological and behavioural factors (influenced by social, cultural and economic issues) that drive the fertility decline.[4] The foremost difficulty in this is the lack of population-representative samples at the individual level. In such an approach, the biological factors can be identified using the so-called 'current duration' design,[5] which can measure the probability of achieving a pregnancy, also called fecundity.

A proposed model for future projects

We propose a population-based approach to measure the biological factors (the primary premise for successful pregnancy) and then examine the influence of behavioural factors. The approach consists of three stages (see Figure), each providing information about different aspects influencing fertility.

In stage 1, a representative sample from the fertile part of the population is invited, following a national public advertising campaign. This will be possible in some European regions that have personal identification numbers. The cross-sectional 'current duration' survey method[5] is then used to identify the fecundity in the population and, at the same time, to gather information about the influence of behavioural factors, such as religion, economics and couples' intentions regarding family size. Thus, the spread of voluntary and involuntary childlessness in the population can be identified.

Stage 2 focuses on a subsample of participants from stage 1 who are currently attempting to conceive or not using contraception. Using a follow-up questionnaire on pregnancy success at 12 and 24 months, the average waiting time to pregnancy, infertility and contribution of male and female factors, as well as social, health, behavioural, environmental and lifestyle factors, are measured. The aim is to describe pregnancy planners and non-planners, changes in planning behaviour over time and explanatory factors for fecundity.



In stage 3, participants from stage 1 who state that they will try to conceive soon are invited to the clinic, to undertake a health history, physical examination, blood and urine sampling, and follow up at a department of reproductive health. This should be an up-to-date sampling and an in-depth prospective biological study on reproductive health of pregnancy planners, to identify important biomarkers of fecundity, including semen quality, menstrual history and coital habits. Important biological, genetic and environmental predictors of fecundity should also be measured and elucidated in relation to follow-up data on makers of pregnancy and pregnancy failures. The aim is to understand the influence of hormones, genetics, fertility markers and environmental effects on successful fertility and infertility.

Significantly, this design would make it possible, for the first time, to elucidate the roles of biological and behavioural factors in determining the fertility rates of a society. It would provide new data on 'hidden' female and male subfertility in people of reproductive age. The design will also support improved care for involuntarily childless couples and provide authorities with a system to follow and address trends in fecundity and other aspects of reproductive health in society.

We cannot realistically estimate the cost of multidisciplinary research centers of the type proposed, but it will be considerable and vary between regions. We suggest beginning with a pilot project in an EU country with good public registries and personal registration numbers.

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ASCL1: a new target in prostate cancer

Targeting mediators of lineage plasticity, such as ASCL1, offers new opportunities in cancer treatment.

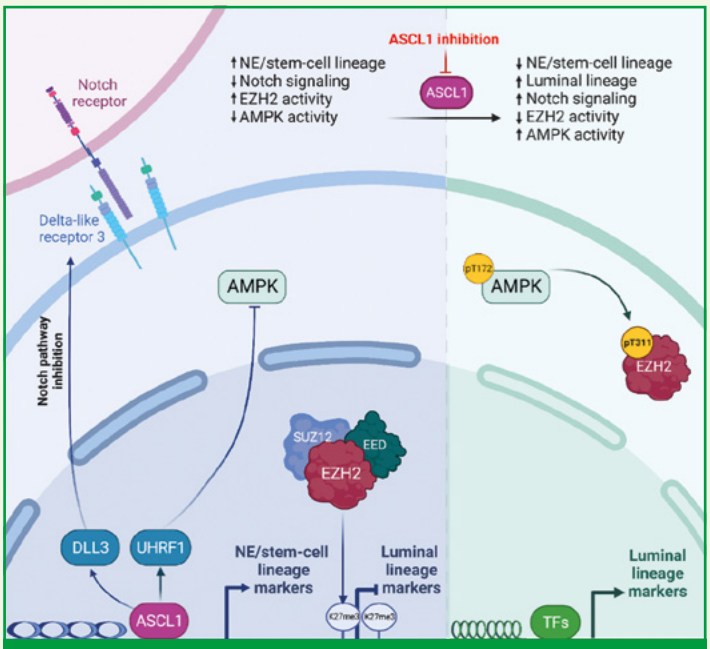
Lineage plasticity is a hallmark of cancer and an emerging mechanism of treatment resistance. It refers to a dynamic and reversible process, controlled epigenetically and transcriptionally, that empowers cells to change their identity and bypass the treatment pressure. Therefore, targeting mediators of lineage plasticity represents an opportunity that can be exploited for patient benefit.

In prostate cancer, the implementation of modern hormone therapies targeting the androgen receptor (AR) has altered the archetypical course of the disease. This is highlighted by the increased incidence of highly aggressive variants that have lost their luminal identity, leading to the development of neuroendocrine prostate cancer (NEPC). These tumours often display histological dedifferentiation (non-adenocarcinoma), activation of mesenchymal, stem-like and neuronal lineage programmes, and distinct epigenetic features.[1,2]

Analysis of the chromatin landscape reveals large-scale chromatin remodelling during the emergence of treatment-induced NEPC, providing an opportune environment for certain transcription factors to be 'reprogrammed' to facilitate lineage plasticity. These changes in chromatin accessibility allow the AR to flow between different binding profiles to impart a plastic state[3] and expose consensus binding sequences of a neuronal lineage determinant transcription factor ASCL1.[4] Moreover, an alternative AR transcriptional programme was found to be operative in concert with a non-canonical enhancer of zeste homologue 2 (EZH2) (associated with threonine 350 phosphorylation) during epithelial-to-neuronal lineage conversion to activate stem-cell and neuronal programmes.[3]

ASCL1 supports lineage plasticity

ASCL1 is the architect of the neuronal fate. It is a pioneering transcription factor that targets closed chromatin to increase accessibility and, in turn, *de novo* gene expression, to facilitate rapid neuronal differentiation.[5] ASCL1 is highly expressed in a subset of small-cell lung cancer (SCLC), neuroendocrine pancreatic cancer and NEPC. Notably, it is induced as early as 3 months post-hormone therapy in patients with prostate cancer.[6,7]



Mechanism of action of ASCL1 inhibition. NE, neuronal; TFs, transcription factors

ASCL1 plays a pivotal role in SCLC tumorigenesis, defining distinct epigenetic and metabolomics groups of SCLC. On one hand, in prostate adenocarcinoma, overexpression of ASCL1 is sufficient to induce neuroendocrine differentiation by binding to and activating stem and neuronal genes, thereby promoting lineage plasticity. On the other hand, early inhibition of ASCL1 abrogates hormone therapy-induced neuroendocrine lineage conversion,[4] suggesting that ASCL1 is a promising therapeutic target to be used in combination with androgen deprivation therapy to overcome treatment resistance.

Mechanistically, targeting ASCL1 leads to the collapse of the chromatin in favour of the luminal phenotype and prevents tumour growth. Loss of ASCL1 diminishes *UHRF1* expression and induces phosphorylation of AMP-activated protein kinase (AMPK) at threonine 172 and EZH2 at threonine 311, resulting in EZH2 cytoplasmic localisation and loss of histone 3 lysine 27 trimethylation at the luminal genes.[4] This effect phenocopies EZH2 inhibition and promotes a neuroendocrine-to-luminal lineage switching, highlighting the importance of ASCL1 and EZH2 in driving lineage plasticity in prostate cancer[3,4] and bridging the knowledge gap in the underlying molecular mechanisms governing cell plasticity and differentiation.

ASCL1: a new therapeutic target

There are no treatment approaches designed to prevent, reverse or treat lineage plasticity. However, an interesting example does exist where acquired neuroendocrine-like states can be reversed by targeting ASCL1, which can result in lineage switching, re-expression of luminal markers and re-sensitisation to AR-targeted therapy.

While there are no available inhibitors for ASCL1, ASCL1-dependent vulnerabilities and ASCL1 transcriptional networks can be explored for therapeutic purposes. Notably, ASCL1 was found to regulate EZH2 activity and targeting ASCL1 phenocopies EZH2 inhibition in NEPC tumours, which may create an epigenetic vulnerability for ASCL1-driven neuroendocrine tumours.

Moreover, delta-like ligand 3 (DLL3), a Notch ligand and the transcriptional target of ASCL1,[8] is upregulated and aberrantly expressed on the cell surface of a subset of SCLC and NEPC. DLL3 inhibition results in the reactivation of Notch signalling, making it a compelling therapeutic target. Multiple strategies targeting DLL3 are under investigation, including the DLL3-targeted antibody–drug conjugate (NCT02709889) and DLL3-CAR-NK cells (NCT05507593) as monotherapies, as well as DLL3 T-cell engager in combination with PD1 inhibitor (NCT04471727). In addition, the lutetium-177-labelled DLL3-targeting antibody SC16 (^{177}Lu-DTPA-SC16) has shown spectacular anti-cancer activity in SCLC and NEPC preclinical models, with a promising clinical path ahead.

In summary, further studies are needed to explore the benefit of using EZH2 inhibitors or AMPK activators as therapeutic strategies in ASCL1-driven lineage plasticity and neuroendocrine tumours. Additionally, whether targeting DLL3 at early stages or in combination with standard care translates into inhibition of lineage plasticity remains to be further validated.

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EJE Diagnosing AVP deficiency with machine learning

A new study in *European Journal of Endocrinology* examines this new technique to diagnose arginine vasopressin deficiency (AVP-D, formerly known as central diabetes insipidus).[1]

AVP-D as a diagnostic challenge

AVP-D and primary polydipsia (PP) belong to the polyuria polydipsia syndrome. While AVP-D mainly results from impaired AVP secretion from the posterior pituitary, PP is characterised by excessive water intake despite intact pituitary function.[2] Correct classification of patients is crucial to avoid severe adverse effects due to wrong treatment.

Diagnostic accuracy has much improved following the introduction of the hypertonic saline stimulation test using the AVP surrogate marker copeptin,[3] but this test comprises considerable discomfort for patients and requires close monitoring of plasma sodium levels to avoid overstimulation. Therefore, an approach that uses readily available clinical and laboratory parameters to select patients who should undergo further testing would be desirable in clinical practice.

Machine learning (ML) is an innovative approach that enables computer systems to automatically learn and improve from data and experience without being explicitly programmed. We therefore hypothesised that an ML-based algorithm with a minimal set of clinically relevant parameters could be used for the classification of AVP-D and PP.

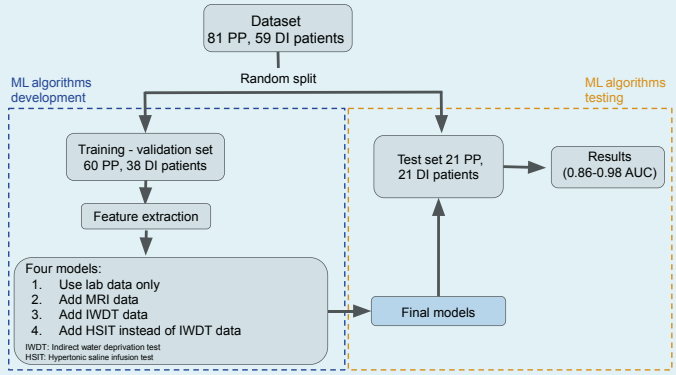
Development and use of the algorithm

Using the dataset from a multicentre prospective study evaluating the hypertonic saline stimulation test to differentiate AVP-D from PP,[3] two datasets were created: a training–validation set and a test set (see Figure).

The training–validation set was then used to train an ML-based algorithm on the data and validate its performance. Using this set, the number of parameters used in the ML pipelines was reduced, which is a crucial step for the algorithm's stability. This resulted in the selection of the parameters plasma sodium and glucose and urine osmolality, as well as information about whether the patient had ever had transsphenoidal surgery or any anterior pituitary deficiencies. For patients who had had diagnostic magnetic resonance imaging (MRI), the parameter urine osmolality was replaced with information regarding whether or not the patient had a pituitary stalk enlargement.

Using these baseline clinical and laboratory parameters, the developed ML-based algorithm was run on the test dataset, resulting in high diagnostic accuracy, with an AUC score of 0.87. Adding MRI data further improved the score, leading to an AUC score of 0.93.

'Development of such "intelligent" algorithms is an important step in expanding applications of machine learning in medicine.'



Workflow scheme: data split, feature extraction, models development advancement and testing the resulting algorithms. DI, AVP deficiency; ML, machine learning; PP, primary polydipsia. Reproduced by permission from Nahum *et al.*[1]

Summary and future perspectives

Our work illustrates how ML-based diagnostic tools may support physicians in clinical practice and have the potential to streamline current cumbersome diagnostic processes such as stimulation tests or MRI in patients with suspected AVP-D. Development of such 'intelligent' algorithms, tailored to decision making in clinical practice, is an important step in expanding applications of ML and computer-assisted diagnostics in medicine.

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Insights from the Editor

In clinical practice, differentiation between arginine vasopressin deficiency (AVP-D) and primary polydipsia is challenging and relevant, as it will inform clinical decision making. Any scientific evidence that may either improve the diagnostic approach or lead to circumvention of the hypertonic saline infusion test is welcomed.

This study by Nahum *et al.* aims precisely to do both. They developed a machine learning-based algorithm to distinguish between the disorders and showed that it performed very well. The publication is not only of interest because it adds importantly to the field of AVP-D, but also because the authors managed to explain the steps used to develop the algorithm in a very clear way. The paper is thus also worth reading by clinicians interested in the 'how' of machine learning.

Hopefully, external validation of the algorithm will be undertaken soon.

Olaf M Dekkers
Deputy Editor, *European Journal of Endocrinology*

Short bouts of exercise and appetite

This recent study in *Endocrine Connections* supports the hypothesis that short periods of high-intensity activity may help reduce appetite in the short term.[1]

Obesity is a major, global, public health challenge. Identifying interventions to optimise energy balance and prevent excess fat accumulation is, therefore, a priority. The control of appetite may be crucial in this context, so that an optimal state of energy balance can be achieved.

Appetite-suppressing effects of exercise

Growing evidence points to exercise as a potential strategy for regulating appetite and achieving an energy deficit. A single continuous session of moderate- or high-intensity aerobic exercise of at least 30 minutes can acutely reduce appetite and change circulating concentrations of appetite-regulating hormones, without compensation through increased energy intake afterwards.[2,3] Research also points to high-intensity exercise having a greater effect than lower intensities.[4] However, continuous exercise bouts, especially at higher intensities, are likely to be an unfeasible strategy for large sections of the population who are sedentary.

A novel strategy for reducing appetite

A lower energy expenditure due to a single day of prolonged sitting is not accompanied by a reduction in appetite.[5] Engaging in large amounts of sedentary behaviour could, therefore, contribute to a positive energy balance and weight gain. This has wide implications in light of technological advancements and office-based work being conducive to excess sitting. Our previous research found that the increased energy expenditure of breaking up prolonged sitting with 2 minutes of light- or moderate-intensity walking every 20 minutes was not compensated for during subsequent food intake, resulting in an energy deficit of 600–1400kJ over a single day.[6]

In the current study,[1] we tested the appetite and energy balance effects of breaking up sitting with short bouts of high-intensity physical activity. We asked sedentary and inactive adults of a mixed weight status to complete three 8-hour conditions in a random order. These were:
a) prolonged sitting (SIT)
b) continuous moderate-intensity exercise for 30 minutes followed by prolonged sitting for the rest of the day (EX-SIT)
c) sitting interrupted with bouts of high-intensity physical activity for 2 minutes 32 seconds at hourly intervals (SIT-ACT); there were eight bouts of physical activity in total, with an accumulative duration of 20 minutes 16 seconds.

Insights from the Editor

As a species, we evolved under conditions in which food was often scarce and physical activity requirements were considerable. Over the last century, these circumstances have changed significantly for most inhabitants of economically successful economies, resulting in the epidemic of obesity and metabolic disease that we are all too familiar with.

Combatting this is an enormous challenge, and I am sure that I am not alone in finding the gargantuan array of strategies and advice on managing weight and appetite thoroughly confusing. The confusion is partly compounded by a lack of properly conducted trials, so that studies such as this one by Bailey and colleagues should be supported and encouraged. *Endocrine Connections* is pleased to consider and publish this type of study.

At this point in writing, I must break off and undertake my 2 minutes of high-intensity exercise...

Adrian Clark
Editor-in-Chief, *Endocrine Connections*

The EX-SIT and SIT-ACT conditions were matched for physical activity energy expenditure. The participants consumed standardised breakfast and lunch meals providing 15% and 30%, respectively, of daily energy requirements. Subjective appetite was measured using visual analogue scales and blood samples were collected to measure circulating appetite hormone concentrations at regular intervals. At the end of each condition, participants consumed a buffet meal *ad libitum*, to measure energy intake differences between the conditions.

Our findings

We found that area under the curve for subjective ratings of satiety ('How satisfied do you feel?') were 16% higher and a composite overall appetite score was 11% lower during SIT-ACT versus EX-SIT, with no differences between SIT-ACT and SIT. Time series analysis indicated that SIT-ACT reduced subjective appetite during the majority of the post-lunch period compared with SIT and EX-SIT, with some of these effects reversed earlier in the afternoon. Total peptide YY and acylated ghrelin did not differ between conditions. Relative energy intake (energy intake during each condition minus the physical activity energy expenditure) was 760kJ lower during SIT-ACT versus SIT.

In conclusion

Breaking up sitting with short, hourly, high-intensity physical activity bouts appears to reduce subjective appetite over a single day when compared with continuous moderate-intensity exercise, and during the majority of the post-lunch period compared with prolonged sitting. The increased energy expenditure from the high-intensity physical activity breaks created an energy deficit that was not compensated for during subsequent food intake.

Breaking up sitting with high-intensity physical activity may, therefore, represent an effective alternative to traditional continuous exercise strategies to help with weight management strategies. This type of activity break regime is likely to be feasible for individuals at home or in the workplace: for example, where stair climbing or jogging on the spot will achieve a sufficiently intense exertion.

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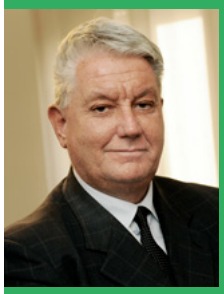
Celebrating success at ECE 2023

Honorary Membership



Andrea Giustina (Italy, left) and **Susan Webb** (Spain) received Honorary Membership of ESE. Andrea was recognised for his service as ESE President (2019–2021), particularly in policy and advocacy and in steering ESE through the pandemic. Susan was recognised for her major involvement in the pituitary field, particularly regarding studies on quality of life.

Special Recognition Awards

Jacqueline Trouillas (France, right) received a Special Recognition Award at ECE 2023 for her instrumental role in launching the highly respected EuroPit meeting, which marked its tenth anniversary in 2022.

Award Lecturers and other recipients

Manuel Tena-Sempere (Spain)
Geoffrey Harris Award

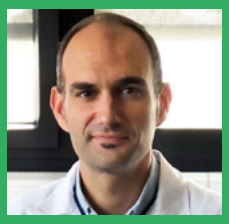
Henriette Uhlenhaut (Germany)
European Journal of Endocrinology Award

Maria Luisa Brandi (Italy)
European Hormone Medal

Richard Ross (UK)
Clinical Endocrinology Trust Award

George P Chrousos (Greece)
Transatlantic Alliance Award

Cecilia Follin (Sweden)
European Endocrine Nurse Award



Manuel Gahete (Spain)
Jens Sandahl Christiansen Award

Martin Heni (Germany)
Jens Sandahl Christiansen Award

Young Investigator Award winners

The 2023 recipients are **Elena Armeni** (Greece), **Maria Claro** (Spain), **Meric Coskun** (Turkey), **Antonio Garcia-Estrada** (Spain), **Anne Jouinot** (France), **Yasmine Kemkem** (UK), **Punith Kempegowda** (UK), **Ewa Mlyczyńska** (Poland), **Sophie Monnerat** (Switzerland), **Saroj Sahoo** (India), **Soham Tarafdar** (India) and **David Veríssimo** (Portugal).

Poster Award winners

The 2023 winning clinical posters were presented by **Jean L Chan** (USA), **Michael Collins** (USA), **Cosimo Durante** (Italy) and **Eleonora Seelig** (Switzerland). The winning basic science/translational posters were presented by **Sayka Barry** (UK), **Lív Bech Árting** (Denmark), **Victoria Louise Marnet** (Germany) and **Marie Oertel** (Germany).

Save the date

For more information about any ESE event see www.ese-hormones.org.

ESE Talks... ESE Committees
6 September 2023
Online (led by the ESE EUWIN Group)

ESE Young Endocrinologists and Scientists (EYES) Annual Meeting
8–10 September 2023
Würzburg, Germany

ESE Clinical Update on Fertility and Pregnancy in Pituitary Disorders 2023
18–20 September 2023
Online

ESE Spotlight on Science
12 October 2023
Online

EndoBridge 2023
19–22 October 2023
Antalya, Turkey

ESE Postgraduate Training Course
23–27 October 2023
Online

ESE Clinical Update on Endocrine-related Cancer 2023
6–8 November 2023
Online

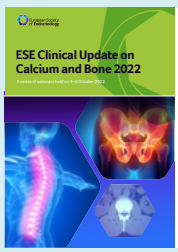
ESE Talks… Demystifying awards
8 November 2023
Online (led by the ESE EUWIN Group)

European Board Examination
8 November 2023
Online

EuroPit 2023
20–22 November 2023
Annecy, France

ESE Spotlight on Science
30 November 2023
Online

ECE 2024
26th European Congress of Endocrinology
11–14 May 2024
Stockholm, Sweden



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