

Issue 53 Spring 2024

Endocrine Views

Opinion and news from the European Society of Endocrinology

ISSN 2752-8529 (online)

EndoCompass: pointing the way in endocrine research



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Register now for ECE 2024

Exciting approaches in thyroid research



In this issue

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Editorial



I am delighted to welcome you to this issue of *Endocrine Views*, my first as Editor. I believe this magazine is an essential and engaging platform for the exchange of information between us, allowing us to hear clearly what is happening in the world of endocrinology.

Through these pages, we can all learn about scientific, clinical and political developments affecting our discipline, and your own ideas and thoughts are always welcome. This is the first issue to be digital-only, a step that allows greater interactivity and closer links with other ESE communication channels, such as online resources and social media. Watch how this develops over coming issues!

EndoCompass (see pages 14 and 15) is a crucial example of how our Society is working with the whole endocrine community to determine the future of our discipline. It will identify key areas to bring to the attention of policymakers and funding bodies. Martin Fassnacht (ESE Clinical Committee Chair) brings us a valuable update, along with others who are closely involved.

Other highlights in these pages include insights from Barbara Zavan into how 3D printing may transform the future of transplantation (page 11), and the use of AI in the diagnosis of thyroid nodules, as discussed by Krzysztof Kaliszewski and Bartłomiej Ludwig (page 12). Learn how ESE's new digital infrastructure will support the Society's future plans (page 5), and hear important news about ESE's journals (page 4) and training events (page 18). We also have a review of ESE's many activities in 2023 (pages 6–9).

Soon we will come together, at the 26th European Congress of Endocrinology, in Stockholm, Sweden, on 11–14 May. On page 3, you can learn about the exciting programme from Suzanne Dickson and Darko Kastelan (Basic Science and Clinical Co-Chairs) and Cynthia Andoniadou (ESE Congress Committee Chair). Then, on page 13, the ESE Award Lecturers preview their talks, which will be extremely popular sessions at the Congress. Importantly, don't miss the Early Bird registration deadline on 22 April, to secure your Congress place at a reduced fee!

Enjoy reading, and let me hear your ideas and opinions.

Marek Bolanowski
Editor, *Endocrine Views*

Areas of interest in this issue:



Adrenal and Cardiovascular Endocrinology



Events



Publications



Awards



Pituitary and Neuroendocrinology



Research



Education



Policy and Advocacy



Thyroid

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Design: Qube Design Associates

Website: www.ese-hormones.org

Cover Image:
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The views expressed by the contributors are not necessarily those of ESE. This document is available on the ESE website, www.ese-hormones.org.

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ECE 2024

11–14 May 2024
Stockholm, Sweden

Södermalm District, Stockholm

Early Bird registration:

22 April 2024www.es-e-hormones.org/ece2024

ESendocrinologyMark

ECE 2024: not to be missed

Europe's leading congress on endocrinology takes place in Stockholm, Sweden, on 11–14 May 2024. We caught up with Darko Kastelan and Suzanne Dickson (Clinical and Basic Science Co-Chairs for ECE 2024), and Cynthia Andoniadou (ESE Congress Committee Chair), who gave us their insights into the exciting scientific programme.

What were your main aims in organising ECE 2024?

We wanted our colleagues to think of ECE 2024 as unmissable! It was important to bring something new, fresh and interesting, for which the event would be recognised for years afterwards. We therefore believe the Congress will attract a large number of endocrinologists from around the globe.

What was the best aspect of organising the Congress?

It has been a rewarding experience on multiple fronts: working in the team with brilliant people, exchanging ideas, and having engaging discussions. Members of the Programme Organising Committee (POC) have been very professional and dedicated. I was delighted by their enthusiasm and the inspiring energy, despite our diverse backgrounds and perspectives. The diversity of endocrine topics and the large number of suggested symposia have been amazing.

Were there any particular challenges?

It is always challenging to ensure a good balance in the programme: simultaneous varied sessions to maximise audience engagement, geographical distribution of speakers etc. We always have more ideas for exceptional speakers than

we can accommodate! Detailed planning and the collective efforts of the POC played a pivotal role in addressing these issues.

What's new for ECE 2024?

We are excited about the first European Women in Endocrinology (EUWIN) symposium, which will highlight the significant contributions of women in our discipline and foster further collaboration and mentorship within the field. Joint sessions with various European professional societies, and endocrine societies from other continents, will introduce diverse viewpoints and provide a unique platform for cross-disciplinary collaboration.

Which sessions are you most excited about?

Clinically speaking, we have compelling sessions on endocrine cancers, such as 'Novel treatment and diagnostic approaches for thyroid cancer' and 'Advances in the management of adrenocortical carcinoma'. Attendees will find sessions on 'Emerging aspects of menopause', 'Male reproduction and fertility' and 'Pathogenesis and novel targeted treatments of craniopharyngioma' equally captivating and informative.

From a basic science perspective, there is an unmissable symposium

on the gut microbiota, exploring links with all kinds of endocrine disease, including diabetes and bone health. Just as engaging is a preclinical symposium on the impact of hormones and their pharmacology on behaviour. A session on senescence-mediated signalling in endocrine-related cancer will highlight the incredible science underlying emerging therapeutic targets.

Just a few of the very exciting plenaries include artificial intelligence in endocrinology, high resolution measurement of tissue steroids, hypoxia (delivered by Nobel Laureate Sir Peter Ratcliffe) and the progress on precision medicine in endocrine tumours. With such a rich array of topics, there's undoubtedly something for everyone.

How can Early Career Members benefit?

Unparalleled access to the most relevant topics in the field will provide updates on new advances. Early Career Members can also directly engage with experts, and have increased visibility for their research, especially through dedicated poster and networking sessions.

ESE's early career committee (ESE Young Endocrinologists and Scientists; EYES) has planned an excellent symposium and a lively EYES social event.

Who would you like to thank?

Our heartfelt thanks go to the entire POC; their collective expertise, commitment and teamwork have played a pivotal role in ensuring the Congress's excellence. We are grateful to all the speakers, whose enthusiastic participation is vital. We also thank the ESE Events Team, led by Claire Arrigoni, and our Professional Congress Organiser Niki Cripps, who make the impossible possible. Last, but not least, we thank you, the endocrine community, for your continuing enthusiasm for this incredible Congress.

What is your advice to the organisers of the next Congress?

Value the diverse viewpoints and expertise within the team: open communication and the flexibility to adapt to unforeseen circumstances are vital. Starting planning early and establishing clear timelines. Ensure you engage early career scientists, who inspire our community with enthusiasm and excellent contributions.

And finally, where will you be on the day after ECE 2024?

Darko: Organising ECE 2024 has required a lot of energy and dedication, so I will prioritise a walk, my favourite music or dinner with friends, to ensure I am refreshed and prepared for my clinical duties. Suzanne: Catching up on sleep is likely to be high on the agenda. We have a full programme and I will, for sure, use the evenings during the Congress to catch up with research colleagues!

Suzanne Dickson

Basic Science Co-Chair, ECE 2024

Darko Kastelan

Clinical Co-Chair, ECE 2024

Cynthia Andoniadou

ESE Congress Committee Chair

'It was important to bring something new, fresh and interesting, for which the event would be recognised for years afterwards.'



New Editor-in-Chief

We welcome Felix Beuschlein as the new Editor-in-Chief of *European Journal of Endocrinology* from May 2024.

Felix Beuschlein is Professor of Internal Medicine/Endocrinology and Director of the Clinic for Endocrinology, Diabetology and Clinical Nutrition at the University Hospital Zurich, Switzerland. He is also the 2024 recipient of the Transatlantic Alliance Award, presented jointly by ESE and the Endocrine Society to recognise his contribution to research in both Europe and the USA (see page 13).

He will take the role over from the current Editor, Wiebke Arlt, who became ESE's President-Elect in 2023. Wiebke said, 'Felix Beuschlein is an internationally leading endocrinologist with a track record of collaboration and innovation. I am delighted that the journal will continue to be in very safe hands.' We thank Wiebke for her huge contribution to the journal's development.



Felix Beuschlein



Two new ESE journals!

ESE is delighted to be launching two new journals this year.

Obesity and Endocrinology

This is an interdisciplinary, open access, online journal for high quality clinical and translational research and reviews on all aspects of obesity. Its content will span the complexity of obesity as an endocrine disease, and obesity's biology, diagnostics, treatment and relationship with other endocrine and metabolic diseases. The journal will also incorporate the interplay between the microbiome and the exposome, as well as the sociological, political and global implications of this complex area. Further announcements will be coming very soon!

Environmental Endocrinology

Environmental Endocrinology is dedicated to all aspects of environmental impacts on hormone systems in humans and living systems, incorporating the One Health perspective. It, too, is an interdisciplinary, open access, online journal dedicated to publishing high quality clinical, translational and basic research. It will welcome submissions from a broad range of research disciplines, such as epidemiology, climate research, toxicological sciences, endocrinology and developmental biology.

Call for Editor-in-Chief

This is an opportunity for a dynamic, well connected, high profile person to be Editor-in-Chief of *Environmental Endocrinology*. We are looking for someone who has:

- experience and knowledge in the field of environmental impacts on endocrine systems
- vision and enthusiasm to advance the field
- the time, drive and ambition to launch and establish this new journal
- an international network and profile
- significant editorial experience of other journal(s)
- a strong background in research and the publication of their work.

The initial term is three years, with full support provided by a professional Editorial Office. The deadline to apply will be in mid-May 2024. You can find out more online about [the role of Editor-in-Chief](#).

Early Career Clinical Endocrinologists

The 7th Early Career Clinical Endocrinologists (ECCE) Meeting took place on 19 October 2023, during EndoBridge in Antalya, Turkey.

The main topic was 'Challenges for endocrinologists in the hormone laboratory', with a keynote lecture by Sabina Baumgartner-Parzer (Austria). The 30 early career participants also enjoyed a talk on 'Supporting early career endocrinologists at the European level' by Walter

Vena (Italy; Co-Chair of the ESE Young Endocrinologists and Scientists (EYES) Committee), as well as national perspectives from early career endocrinologists Riikka Sane (Finland) and Nazi Tchelidze (Georgia). Next year's meeting will focus on 'Imaging in endocrinology'.



11th Annual EYES Meeting

The next Annual Meeting of the ESE Young Endocrinologists and Scientists (EYES) takes place on 6–8 September 2024 in Helsinki, Finland. Register your interest [🔗](#) and follow the event on Instagram [🔗](#) to stay informed.



EYES 2024

ESE Young Endocrinologists & Scientists
11th Annual Meeting
6–8 September 2024 in Helsinki, Finland

Keep up to date with ESE on social media



ESEndocrinology



EuropeanSocietyofEndocrinology



esehormones



European Society of Endocrinology



BecauseHormonesMatter



A new era for ESE

You may have noticed some changes in the last few months, as ESE's new digital infrastructure has gone live. This has not just remodelled the ESE website, it is the result of a long term process to improve member participation and to better support the spectacular growth of ESE's activities.

This investment in ESE's future is already making a difference. You are likely to have already used the new ESE website, which launched in December 2023. Less immediately visible, but with an even greater impact, is our new membership management system. An integrated learning management system will follow in the near future, completing our planned digital transformation.

The launch of the website and membership management system is the result of a project lasting nearly

two years, starting with a business case, and progressing through the tender process, system selection, scoping and development. Now it is live, it will be continually be tweaked and improved!

These valuable changes will provide a solid foundation for our future plans and independence, allowing us to increase our support to you, the members of ESE. As a key building block for the growth of ESE, the infrastructure will provide us with a deep, comprehensive



The ESE Team working together in 'January team week'

understanding of our activities through a better analysis of the data.

Launching the membership management system means we have been able to bring our membership and financial management in-house. As a result, we have new Membership and Finance Teams, and an increased resource in marketing and communications. ESE now has a team of 19 people, representing 7 countries across Europe.

This work is a major financial investment for the Society, using funds that were being held over the reserves. Our final goal is for all data generated by ESE activities to be held and reported on through a cohesive system, fully operated and analysed by ESE, allowing 'one version of the truth'. This will improve ESE's understanding of members' engagement and needs, and we will be able to send you the information that you find most valuable and interesting.

Importantly, developing this new 'engine' to support ESE's ambitions will underpin the four pillars of our strategy for 2022–2026:

- **Unite and represent:** holding our data centrally will help us improve engagement with everyone that we work with, in a more efficient way.
- **Support:** developing a comprehensive digital interface will improve your experience, as our members, in your interactions with ESE.
- **Advance:** adding an integrated learning management system will give us insights into your uptake of our educational programmes and resources, so informing decisions about future activities.
- **Sustainable, trusted and valued:** investment in this system will enable us to reliably meet your needs and our long term objectives.

Jérôme Bertherat, ESE President
Helen Gregson, ESE Chief Executive Officer



'Having an effective membership system completely run by the ESE team, and the data-driven decisions that this enables, is an essential step to facilitate our strategy for 2022–2026, and will help secure our goals and a successful future for ESE – so we can continue to support the endocrine community as effectively as possible! It is a substantial investment, but much needed and important for our ongoing development.'

Jérôme Bertherat, ESE President

Help raise hormone awareness

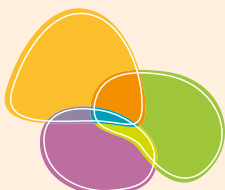
European Hormone Day returns on Wednesday 24 April 2024.

This year, European Hormone Day will focus on **increasing public awareness of the vital role hormones play in health and disease**. This will build on last year's Annex to the Milano Declaration, which shared **10 Recommendations for Good Hormone Health** [🔗](#). You can help support this work by promoting the small steps everyone can take to improve their hormone health. We hope you'll join us again to raise awareness of endocrine health – #BecauseHormonesMatter.

To help you spread the word, ESE is providing a public outreach toolkit with social media materials covering endocrine-disrupting chemicals, cancer, obesity and rare endocrine diseases. You can choose whatever themes and activities are most relevant to your community. Translations will be available in 13 languages. We have also updated the *Because Hormones Matter* leaflet and awareness days calendar that we published in 2023.

Please use the hashtag #BecauseHormonesMatter on European Hormone Day and other awareness days, to boost our collective reach. We'll be sharing more public-facing information, and celebrating the endocrine community, on our new [BecauseHormonesMatter](#) [🔗](#) Instagram account. Come and say hello!

More information can be found at www.europeanhormoneday.org.



**European
Hormone Day**
Because Hormones Matter
24 April 2024

Your Society in 2023

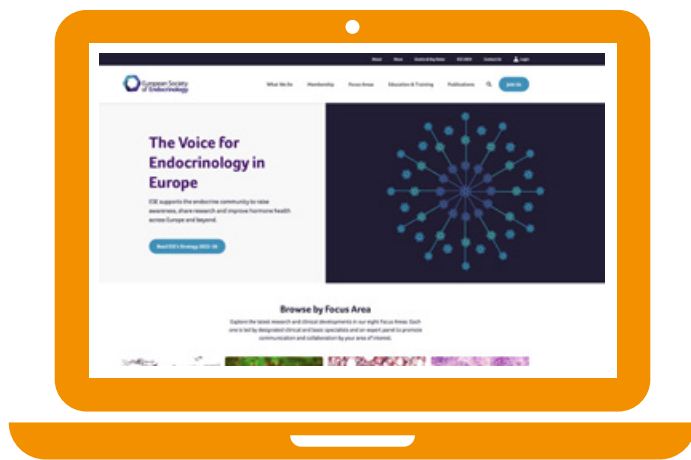
ESE is central to Europe's endocrine community, and represents over 22,500 endocrinologists across the continent. We are proud of the way we work.

Our **strategy for 2022–2026** [↗](#) helps us drive progress by:

- **UNITING and REPRESENTING** the European endocrine community and being acknowledged as the reference point for endocrine health and science
- **SUPPORTING** our members in education, clinical practice and research
- Further **ADVANCING** the science and clinical care of endocrinology
- Reinforcing ESE as a leading society which is **SUSTAINABLE, TRUSTED AND VALUED**

'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.'

ESE is SUSTAINABLE, TRUSTED AND VALUED



2023 saw ESE progress its **digital transformation**, developing a **new website** [↗](#) (left) and **association management system**.

We have new **Membership and Finance Teams**, and an increased resource in marketing and communications.

ESE now has a **team of 19 people**, representing 7 countries across Europe.

We welcome:

- Shireen Ali
- Giulia Esposito
- Pedro Marques
- Hayley McLay
- Claire O'Brien
- Sally Pearce
- Claire Tibbles
- Helen Williams

At the 2023 AGM, **members voted to increase membership fees** from 2024, so ESE can continue to support them with a **growing range of benefits** [↗](#)

Led by endocrinologists

Jérôme Bertherat began his Presidency, and ESE welcomed its first female President-Elect, **Wiebke Arlt**.

Eleanor Davies became Science Committee Chair as **Martin Fassnacht** moved to become Clinical Committee Chair. **Sebastian Neggens** took on the role of Rare Disease Committee Chair.

Antoan Stefan Šojat joined the Executive Committee as an ex-officio member representing the EYES Committee.

We thank **Martin Reincke, Robin Peeters, Simona Glasberg** and **Lina Paschou** who stepped down from these respective roles.



Clockwise from left: **Martin Fassnacht, Wiebke Arlt, Eleanor Davies, Sebastian Neggens and Antoan Stefan Šojat, with Jérôme Bertherat** (centre)

Abbreviations used on pages 6–9:

ESPE, European Society for Paediatric Endocrinology; EUWIN, European Women in Endocrinology; EYES, ESE Young Endocrinologists and Scientists; REACH, Registration, Evaluation, Authorisation and Restriction of Chemicals.

ESE UNITES and REPRESENTS the European endocrine community

ESE's National Affiliated Members became **National Partner Societies** [↗](#), reflecting our close working relationship.

Working in partnership

Our work with other societies promoted innovation, collaboration and opportunities.

ESE held **joint symposia** with the German Society of Endocrinology and Italian Association of Clinical Endocrinologists. We updated our **memorandum of understanding** with the Korean Endocrine Society.

ECE 2023
saw ESE collaborate
with **9 societies**
from around the globe

ESE welcomed the European Menopause and Andropause Society as a **Specialist Partner Society** [↗](#). Partnering with International Fundraising for Congenital Adrenal Hyperplasia will provide **up to €150,000 project support** [↗](#).



Corporate members

ESE welcomed new corporate members **Horizon Therapeutics** and **Neurocrine Biosciences** [↗](#).



Speaking out for science

ESE **petitioned the European Commission** to revise the **REACH legislation**, and held an event in the European Parliament: **'Shaping an ambitious legislative framework for endocrine disruptors'** [↗](#).

We issued a **statement explaining why some animal experiments are needed** [↗](#), in response to a European Citizens' Initiative.

ESE made a **joint statement with ESPE** on the **crisis in Nagorno-Karabakh** [↗](#) and continued our support for Ukrainian colleagues.

Highlighting hormone health

European Hormone Day 2023 saw ESE and the ESE Foundation launch **10 Recommendations for Good Hormone Health** [↗](#), a public-facing annex to the Milano Declaration.

ESE's affiliated Patient Awareness Groups supported the leaflet **Because Hormones Matter** [↗](#), with simple actions to boost endocrine health.

Identifying research needs

EndoCompass [↗](#), was launched to **secure the future of endocrine research**, guiding policymakers and funding bodies in Europe. EndoCompass webinars tackled **emerging challenges: the changing environment and the AI revolution** [↗](#).



Supporting patient groups

3 new patient leaflets [↗](#) bridged the gap between clinical guidelines and patient understanding:

- adrenal incidentalomas
- adverse conditions after immune-checkpoint inhibition
- pituitary adenomas in pregnancy.



ESE welcomed **new Patient Advocacy Group Affiliated Members** [↗](#):

- British Thyroid Foundation
- Cushing's Support and Research Foundation
- SOD Italia
- Verity PCOS

ESE's **Hypoparathyroidism Patient Forum** [↗](#) brought clinicians and patients together to hear each other talk.

An ESE-endorsed research project on **self-management and support for patients with adrenal insufficiency** will inform a future ESE Position Statement.

ESE SUPPORTS members in education, clinical practice and research

Recognising achievement

Andrea Giustina and **Susan Webb** became Honorary Members of ESE, while **Jacqueline Trouillas** received a Special Recognition Award (pictured right, top to bottom).

We recognised excellence in endocrinology with our **2023 ESE Awards**.

Early Career Members received **12 Young Investigator Awards** and **8 Poster Awards** for high quality abstracts at ECE 2023.



Providing opportunities to learn

ESE held an inaugural **Transatlantic Alliance Webinar** with the Endocrine Society on polycystic ovary syndrome.

5

Spotlight on Science webinars

2

Postgraduate Training Courses online

3

Clinical Update webinars

13

ESE Talks including

- nurse development sessions
- our first webinar in French with the Tunisian Society of Endocrinology
- talks led by EUWIN
- more ESE Talks...Rare Diseases events

plus

- **ESE Summer School** Innsbruck, Austria
- **EuroPit 2023** Annecy, France
- **10th EYES Annual Meeting** Würzburg, Germany



Keeping members informed

Marek Bolanowski became Editor of **Endocrine Views**, our membership magazine, with Eleni Armeni in the new role of Deputy Editor. We thank retiring Editor Justo Castaño for leading the magazine's development.

A new team of Walter Vena as Editor and Juan Jiménez Vacas as Deputy Editor led our early career community magazine, **EYES News**.

The new **ESE website** and membership portal were launched!



Supporting early career endocrinologists

The **10th EYES Annual Meeting** was held jointly with YARE (Young Active Research in Endocrinology).

128

early career attendees from 22 countries worldwide



The **EYES Observership (Exchange) Programme** expanded.

Advanced Research Observership Programme launched.

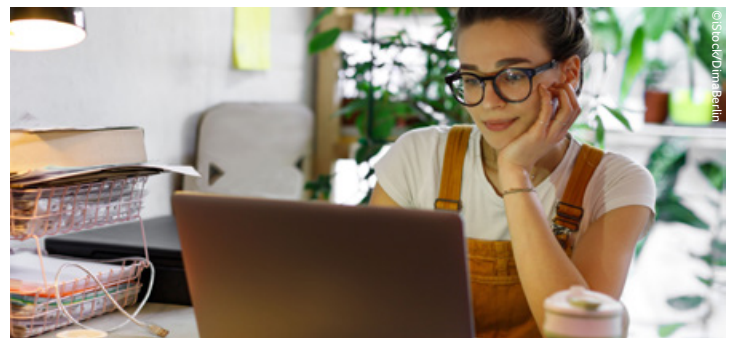
24

centres across Europe and one in South America

€30000

to conduct scientific projects for up to 3 months

The **European Board Examination** took place virtually for the first time, with remote invigilation.



ESE ADVANCES the science and clinical care of endocrinology

Bringing members together

The **25th European Congress of Endocrinology (ECE 2023)** took place in Istanbul, Turkey. Dr Hans Kluge, Director of WHO, addressed the Opening Ceremony.



3101 in-person attendees

700 participants online

Nurturing research projects

ESE supported surveys on the therapeutic approach to **polycystic ovary syndrome** and the management of **Graves' disease**.

The ESE-supported **European Register on Cushing's syndrome (ERCUSYN)** celebrated its 15th anniversary in 2023.



225 grants of **€400** supported attendance



0 delegate bags - to support the environment

Publishing quality research



Publication of **European Journal of Endocrinology** moved to Oxford University Press, with a new website, and a new cover image each issue.

It retained the top spot in the endocrine field: **2022 Impact Factor**

5.8

5-year Impact Factor

6.3

New guidelines on **Management of adrenal incidentalomas** (update) and **Assessment and Management of Polycystic Ovary Syndrome** (partner guideline) were published.

The **High impact articles collection** highlights the journal's most cited, widely read and talked about papers.

Read the **TOP 5 reasons to publish in EJE**



Endocrine Connections welcomed new Editor-in-Chief Faisal Ahmed. We thank Adrian Clark for his dedication as Editor.



2022 Impact Factor

2.9

5-year Impact Factor

3.2

The journal published collections of articles on:

- **Late effects of cancer treatment**
- **Klinefelter syndrome**
- **Diabetes technology in managing diabetes**

Read the **top-cited articles in 2023**



Meet Marek Bolanowski

We welcome Marek Bolanowski as the new Editor of *Endocrine Views*. Marek is Head of the Department and Clinic of Endocrinology, Diabetes and Isotope Therapy at the Medical University in Wrocław, Poland. Here, he tells us about his career and his perspective on endocrinology.

Please tell us about your current role

I have worked for many years in the Department and Clinic of Endocrinology, Diabetes and Isotope Therapy at the Medical University in Wrocław. Since 2013, I have been Head of the Department. Initially, I started in the Department of Clinical Pharmacology, which gave me a very good introduction to the clinics.

I am a specialist in internal medicine and endocrinology. Actually, I am responsible for the education of students in internal medicine in the Medical University. In our department, we undertake student classes in the sixth year of study. We have about 380 Polish-language students and about 90 English-language ones. Additionally, we teach nuclear medicine. Our department is ESE-affiliated and is included on the list of participating centres for the EYES (ESE Young Endocrinologists and Scientists) Clinical Observership Programme [🔗](#).

What inspired you to become interested in endocrinology?

During my medical studies, I was fascinated by surgery, but later my interests developed and finally focused on internal medicine. Hormonal regulation based on feedback pathways and the clear clinical features of endocrine diseases led to my choice.

What are your research interests?

I am mainly interested in pituitary diseases and osteoporosis. We recently published several papers on the different metabolic aspects of acromegaly, Cushing's syndrome, Addison's disease and polycystic ovary syndrome (PCOS). Another

important topic is quality of life in patients with pituitary tumours and Addison's disease. Currently, we are collecting samples from our patients with pituitary tumours for genetic studies in collaboration with Márta Korbonits (UK). Other interests include cardiovascular complications of pituitary diseases, inflammation in PCOS, Graves' orbitopathy, and the hormonal complications of COVID-19.

What has been the proudest moment in your career?

There have been a few. First was organising and co-Chairing ECE 2014 in Wrocław with Andrzej Milewicz. Then, I was Chair of the ESE Postgraduate Courses in Wrocław (2016) and Lviv, Ukraine (2017), and also the European Neuroendocrine Association Congress in Wrocław (2018). Lastly was my participation in the Acromegaly Consensus Conferences 2017–2019.

Why is *Endocrine Views* important for ESE?

ESE, in gathering together several thousand members, needs a platform for information exchange, news, and scientific and clinical advances. Thanks to *Endocrine Views*, readers can get to know the members of ESE Committees and endocrine experts better, not only from their professional achievements, but also in 'normal daily life'. While some people may find browsing the ESE website interesting, more active engagement and communication results from the delivery of news via a regular membership magazine. You'll receive notification of each new digital issue straight to your inbox, and you will be able to view fully interactive, flick-through issues of *Endocrine Views* online [🔗](#).

'Endocrinology is a fascinating part of medicine and brings a lot of surprises.'



Marek Bolanowski

Can we expect any developments in the magazine?

Moving to digital-only is an important step. Not only does this move represent financial and environmental savings, it will enable greater integration with ESE's other communication channels, such as videos and social media, and more interactivity in general. Watch out for developments and enhancements over the coming issues!

What are the biggest challenges for European endocrinology currently?

I see these as the use of genetic diagnostics for optimal, individualised therapy, and endocrine disturbances following modern biological therapies.

And what are the greatest opportunities for our field?

I believe artificial intelligence (AI) will be a 'game changer' soon. Initially, it might be very helpful in diagnostics (visualisation). Later on, we will be able to use AI to optimise the choice of individual therapy. We must anticipate the opportunities it offers in daily clinical practice and how we can adopt these, while not losing control to AI.

What do you enjoy most about the annual Congress?

ECE provides an important opportunity not only to hear about advances in science, but also to develop personal contacts with colleagues and friends from abroad.

What is your advice for people starting their career in endocrinology?

Endocrinology is a fascinating part of medicine and brings a lot of surprises. It is necessary to know the mechanisms of hormonal actions and physiology well, but most important are clinical practice and experience. Early career endocrinologists must be patient and be prepared for non-typical cases. Practising in different centres, and international exchange, are very important in developing new ideas, as is gaining personal experience from older colleagues or tutors.

What will we find you doing on a day off?

In the summer, I like to cycle and observe animals living in the forest and meadows not far from my home. I am also the happy grandfather of three-year-old Matylda, who lives near us with her parents.

Is there anything else you would like to add?

I thank Justo Castaño for laying excellent foundations for my editorship of *Endocrine Views*. I will do my best to maintain the highest standards for our membership magazine, and to make my personal mark on its evolution.

To contact Marek with comments or suggestions about the magazine, email info@ese-hormones.org.



Exploring 3D printing and extracellular vesicles

Barbara Zavan contemplates how generating functional 3D-printed organoids may offer promise for transplants of the future.

The escalating global shortage of transplantable organs constitutes a formidable challenge, characterised by an ever-growing demand that dramatically surpasses the insufficient supply of willing organ donors.

Despite the urgency of the matter, progress in increasing the number of donors and actual transplantations remains disappointingly minimal. Recent strides at the intersection of biology and engineering, propelled by innovations in bioprinting, regenerative medicine and materials science, have paved the way for ground-breaking developments in the creation of biological tissue. However, the transition from the conceptualisation of 3D-printed constructs to their practical clinical applications is fraught with an array of complex challenges.

The need for new technology

Traditional tissue engineering methods, while showcasing potential in the generation of artificial organs, hinge on the placement of living cells and biologically active substances onto a porous scaffold. While effective in tissue repair, this approach encounters limitations, such as inconsistent cell distribution, low cell density, and the notable challenge of integrating vascular and neural networks.

The advent of 3D bioprinting, an additive manufacturing technique, has revolutionised tissue engineering by providing the means for the precise and customisable construction of biological structures, effectively overcoming the constraints inherent in traditional methods. Bioprinted models stand as superior representations of human physiology, adept at mimicking intricate 3D microenvironments, thus surmounting the limitations posed by 2D cell cultures and animal models.

The process of bioprinting

The bioprinting process unfolds in three pivotal phases: pre-bioprinting, bioprinting and post-bioprinting. In the pre-bioprinting phase, a digital design is meticulously crafted from a biological model obtained through a tissue biopsy, often augmented by the aid of computed tomography or magnetic resonance imaging scans. These 2D images serve as the blueprint for subsequent model creation, and the careful selection and cultivation of cells in a suitable medium yield bioink – an indispensable component for the subsequent bioprinting stage.

The bioprinting phase is a particularly intricate process involving the loading of bioink into a bioprinter, guided by the software's 2D design, to fabricate a 3D structure on a scaffold. The complexity of this stage arises from the necessity of forming diverse cell types that faithfully mimic the targeted tissues and organs. Bioink, systematically deposited layer by layer, comprises living cellular components, growth-supporting substances and a reinforcing framework such as hydrogel, derived from either natural or synthetic biomaterials. The choice of bioink is a critical consideration, taking into account its physicochemical attributes, biocompatibility and potential for large-scale production.

Our experience

In the course of our preliminary results, the focal point shifted towards obtaining organoids for the purpose of studying extracellular communication through exosomes. Organoids, aptly described as 'in vitro mini-organs,' are meticulously crafted by isolating cells from tissues or differentiating them from stem cells, thereby forming functional 3D structures that authentically mimic the complexities of original tissues. The process of organoid generation delves into the early biological concept of cell dissociation and reaggregation. Given the limitations of 2D adherent cell culture in representing the original structure and function of organs, 3D organoids have risen to prominence as a superior model for clinical applications in various organs compared with their 2D counterparts.



Our project started with the digestion of a mouse thyroid gland, leading to the isolation of cells. These cells, subsequently embedded in a bioink based on hyaluronic acid, underwent the intricate process of 3D bioprinting. The resulting diminutive constructs were then cultured *in vitro* for a span of up to 3 weeks, facilitating the seamless reorganisation of cells into compact, organic-like clusters. The analysis of gene expression profiles, conducted through *sec* mRNA, unequivocally confirmed the sustained maintenance of an adult phenotype in the cells. Following this, our research trajectory pivoted towards the isolation and comprehensive characterisation of extracellular vesicles (EVs) produced within these intricate organic structures.

The crucial role of extracellular vesicles

Extracellular vesicles, fulfilling a pivotal role in the exciting realm of endocrinology, represent a novel dimension of intercellular communication. Released by diverse cell types, these membrane-bound structures serve as messengers traversing the extracellular space, ferrying proteins, lipids and nucleic acids. In the world of endocrinology, EVs facilitate the transfer of signalling molecules between endocrine cells, thereby wielding influence over hormonal regulation and cellular responses.

A particularly profound aspect of EVs in endocrinology lies in their ability to mediate long-distance communication between glands and tissues, seamlessly complementing the traditional conduits of hormonal transmission. EVs contribute significantly to the fine-tuning of endocrine processes, delivering bioactive molecules – including microRNAs and hormones – to target cells, thereby orchestrating the modulation of gene expression and cellular functions. The study of EVs in endocrinology not only sheds new light on our understanding of diseases such as diabetes, thyroid disorders and hormonal imbalances, but also unveils promising avenues for diagnostic and therapeutic interventions. The cargo carried by these vesicles serves as a reflective mirror, offering valuable insights into the physiological state of the originating cells.

In conclusion, EVs emerge as a captivating frontier in endocrinological research, unravelling the intricacies of intercellular communication and extending insights beyond the confines of traditional hormonal pathways. Delving deeper into EV-mediated signalling holds the promise of ground-breaking advancements in both the understanding and treatment of endocrine disorders, showcasing the potential for transformative breakthroughs in the field. As the tapestry of knowledge surrounding EVs unfolds, the prospect of ushering in a new era of precision medicine for endocrine conditions becomes increasingly apparent.

Barbara Zavan

Department of Translational Medicine, University of Ferrara, Italy

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AI and thyroid nodule diagnosis

Artificial intelligence (AI) has an important role to play in the evolving field of thyroid nodule management.

Artificial intelligence in medicine might be described in brief as the use of machine-learning models in searching medical data. Due to recent advances in informatics and computer science, AI is quickly becoming an integral part of modern healthcare. Nowadays, the main role of AI in medical practice is clinical decision support and extensive imaging analysis. In the latter, AI tools are used to analyse ultrasound scans, X-rays or microscopic views of many pathologies, which might be missed by clinicians.

The incidence of diagnosis of thyroid nodules is increasing every year, leading to a greater risk of unnecessary procedures being performed or wrong diagnoses being made. Based on palpation, they have generally been detected in 4–7% of the population.¹ However, the current high quality of ultrasound equipment means they are now being diagnosed in as many as 50–70% of the general population.¹

For thyroid nodule management, the current diagnostic goals are early detection of the malignant lesions and quick decision making regarding further treatment. We are currently observing many developments in the field of thyroid cancer, including:

- increased 'cancer screening activity'
- the introduction to thyroid cancer types of non-invasive follicular neoplasm with papillary-like nuclear features (NIFTP)
- the possibility of papillary thyroid microcarcinoma (PTMC) active surveillance (AS), and
- the occurrence of personalised medicine in thyroid cancer management.¹

Against this background, AI is starting to play an important role in thyroid nodule management.²

What is the role of AI?

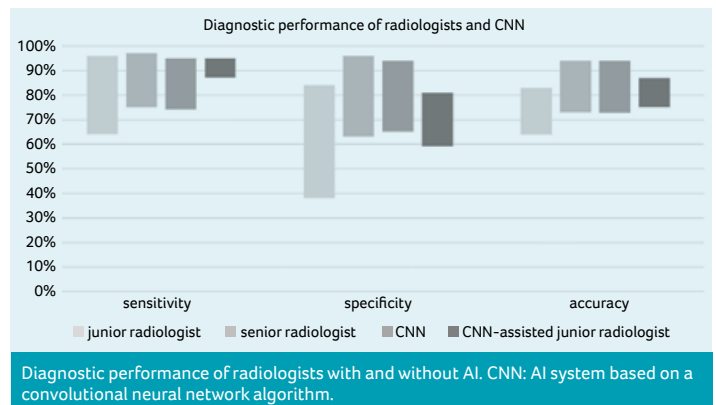
AI spans a wide collection of technologies and represents a relatively new area of interest. The idea of creating a machine that was able to simulate critical thinking appeared for the first time in 1950.² Many forms of AI have immediate relevance to healthcare. However, the specific processes and tasks they support vary widely. Thus, the application of AI in the diagnosis of thyroid nodules is developing in many different directions.

The usefulness of some algorithms in making independent accurate decisions is being tested, and as an adjunct to physicians, for even greater accuracy in classifying visualised tumours. Currently, it seems that AI might be used as a computer-aided diagnosis system in assisting clinicians, especially those who are less experienced, in making further diagnostic and therapeutic choices.

Current opportunities for AI use

The previous reports of AI in the diagnosis of thyroid nodules indicate developments in several areas, such as ultrasonography, histopathology and nuclear medicine, with the current best understood utility in the analysis of ultrasonographic images.

'With the help of AI, many unnecessary biopsies can be prevented without harm to the patient as a result of incorrect diagnosis.'



The proper assessment of the image visible on ultrasound is crucial for further treatment, because it determines the necessity of ultrasound-guided fine needle aspiration biopsy of the lesion for further diagnostics. The benefits of using software to assist radiologists, especially those at the beginning of their clinical careers, seem to be obvious. They enable less-experienced practitioners to significantly improve their performance, compared with more experienced radiologists (Figure).

Moreover, the benefits for patients are also without doubt. Studies indicate that, with the help of AI, many unnecessary biopsies can be prevented without harm to the patient as a result of incorrect diagnosis.³

Developing algorithms

The utility of computer programs in the diagnosis of thyroid nodules is an interesting and key issue. Current research uses a whole range of programs belonging to both convolutional neural network (CNN) and non-neural network algorithms. The former, for the time being, constitutes the 'gold standard' in computer-assisted image evaluation, and resembles the functioning of the animal visual cortex. The benefits of co-operation between these two groups of programs are also being investigated.⁴ Just as important as the algorithm itself is the way in which it is taught before its wider use in clinical practice.

Supervised learning is typically used in medicine. A dataset, previously classified by a medical professional, is entered into the algorithm, and the program itself develops a function with the highest possible accuracy. The training set should be neither too small nor too large, as it can negatively affect AI performance. Therefore, close collaboration between clinicians and experienced computer scientists is extremely important when developing this type of project.^{5,6}

Looking forward

The presence of AI in medicine is already a fact and, over time, it will enter more and more areas of the discipline. We already have very promising results in the diagnosis of thyroid nodules. As technological innovations are implemented, we should encourage clinicians to conduct newer and more detailed research, combining medical and computer sciences.

However, we should not forget about the potential limitations and risks of using algorithms. It should be remembered that the effectiveness of the programs depends on the knowledge and experience of their creators, and that the algorithm, once written and 'trained', unlike a human, will not update medical knowledge.

Krzysztof Kaliszewski and Bartłomiej Ludwig

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Award Lecturers at ECE 2024

We congratulate the recipients of ESE 2024 Awards, who will be speaking at ECE 2024. Here, they preview their lecture topics.

Hypothalamic control of energy and glucose homeostasis



Jens C Brüning
Geoffrey Harris Award

My laboratory has investigated how the hypothalamus integrates signals from the periphery of the organism, both to adapt food intake in accordance with energy availability, and to co-ordinate glucose and lipid metabolism in peripheral tissues.

We have revealed that fasting-activated hypothalamic neurones, characterised by expression of agouti-related peptide, play a critical role in insulin's ability to suppress hepatic glucose production, and also represent a critical relay to promote activation of the HPA axis

upon starvation. Data suggest these highly specialised neurones adapt the integrative physiology of the organism to fluctuations in energy availability.

Moreover, we have identified hypothalamic neurones which are activated upon consumption of highly palatable food, thus contributing to the development of obesity. Finally, we have provided a unified single cell sequencing atlas of murine hypothalamus, revealing the striking heterogeneity of hypothalamic neurones in control of energy and glucose homeostasis, serving as a basis for further functional investigations.

From the adrenal to metabolism: lessons learnt from MRAP



Li Chan
European Journal of Endocrinology Award

I will focus on the journey of discovery of the melanocortin receptor accessory proteins (MRAPs) and their importance in adrenal biology and metabolism. These are small, single transmembrane domain, accessory proteins. MRAP is an essential accessory factor for the functional expression of the melanocortin 2 receptor (MC2R)/adrenocorticotrophin (ACTH) receptor. Its importance in adrenal gland physiology is demonstrated by the clinical condition familial glucocorticoid deficiency type 2. Its paralogue MRAP2 is predominantly

expressed in the hypothalamus (including the paraventricular nucleus), and has been linked to mammalian obesity.

Understanding the action of these promiscuous accessory proteins, their interaction with a broad range of G protein-coupled receptors, and their role in adrenal and metabolic diseases remains the focus of my laboratory. I will also present our work characterising small molecule MC2R antagonists for treatment of conditions of ACTH excess.

Mortality and morbidity in rare pituitary and adrenal disorders



Gudmundur Johannsson
European Hormone Medal

The outcome and prognosis for patients with rare endocrine disorders are not well known. Due to the low incidence and prevalence of these diseases, very few clinicians will know whether the outcome is poorer than expected.

I will show data from specially designed epidemiological studies which have helped us to understand that, in some patient groups that were considered to have an excellent outcome, it was in fact poor, with excess co-morbidities and mortality. My focus will be on patients with hypopituitarism or primary adrenal insufficiency.

These studies have shown that further improvement in management is needed. This includes developing new therapeutic options, improving overall structure of care, with formation of dedicated multidisciplinary care teams, and improving patient education. The results of adopting these interventions suggest that improvement in outcome can be obtained.

Transformation of German endocrinology assistants



Kathrin Zopf
European Endocrine Nurse Award

Specialised training for nurses is not established everywhere. I am proud that the German Society (DGE) has enabled nurses and medical assistants to qualify as DGE Endocrinology Assistants for over 20 years. My completion of the first course in 2001 was life-changing, and enabled me to engage in professional exchange with colleagues from other countries, even under the difficult conditions that exist for nurses in Germany.

I will try to show how challenging it is to get ahead as a nurse in Germany. The profession is not academised here and there are only a few model projects with academised nurses,

who cannot work as independently as is possible in many other countries. However, it is possible to specialise and establish yourself as an important member of the endocrine team. To this end, it is important that regular further training is offered to keep nurses up to date with the latest developments.

Primary aldosteronism: solutions, insights and challenges



Felix Beuschlein
Transatlantic Alliance Award

Scientifically, I am interested in all aspects that relate to the adrenal gland: tumour growth and dysregulation of steroidogenesis, as well as adrenal insufficiency. In my lecture in Stockholm, I will focus particularly on primary aldosteronism – a pivotal area of my research over the past 10 years. This condition, relevant both as a very rare familial form and as a very prevalent disease in the overall hypertensive population, offers a fascinating lens through which to examine adrenal disorders.

My talk will highlight the multifaceted nature of primary aldosteronism, including functional insights into molecular mechanisms that result in aldosterone excess, and consequences of these alterations for metabolic pathways. I will discuss the development and implementation of strategies that enhance awareness, facilitate screening, and simplify the differential diagnosis of primary aldosteronism, with the aim of bridging the gap between advanced research and clinical practice.

Early menopause: is it different from POI?



Panagiotis Anagnostis
Clinical Endocrinology Journal Foundation Award

It is universally accepted that a menopause occurring at an age greater than two standard deviations below the mean (49–51 years) is considered as 'premature'. The age of 40 years has widely been agreed as the cut-off point for defining 'premature menopause', also known as 'premature ovarian insufficiency' (POI), which involves 1–3% of the postmenopausal population. Moreover, a broader limit of 45 years has also been adopted in order to define 'early menopause' (EM), aiming to include women with an age at menopause of 40–44 years, which involves 10% of women.

An accumulating body of evidence shows that EM and POI share common risks, mainly involving cardiovascular disease, musculoskeletal health and dementia, leading to increased mortality. Therefore, a shift of the age threshold to <45 years to define 'premature menopause' may provide a broader coverage of these women, supporting the need for prompt administration of hormone replacement therapy.



Why we all need EndoCompass



Martin Fassnacht, co-Chair of the EndoCompass Project, shares his perspective on its importance for European endocrinology.

How did you become involved in EndoCompass?

I have been involved in several ESE committees over the last decade. It has been an honour to be a member of the Executive Committee since 2021, first as Chair of the ESE Science Committee and now of the ESE Clinical Committee. As a result, I was invited to co-Chair EndoCompass when it launched almost two years ago.



Why does the endocrine community need EndoCompass?

Fostering research and scientific progress is one of the absolutely essential tasks of ESE. Good research requires funding, but European and national research and health policymakers and funding bodies are not always aware what is 'hot' or important in our field. EndoCompass aims to outline the specific research needs and opportunities in endocrine health and disease that, if included in future research calls and funding programmes, will contribute to better health in Europe. This project will serve as a 'compass' for endocrine research for the next 10–25 years.

Why is now the right time?

The European Commission is about to start work to continue the Horizon Europe programme, which includes funding for pan-European biomedical research. A number of national funding bodies are renewing their programmes too. This is a good time to provide direct feedback from the community.

What are the project's main aims and outputs?

Our aim is to identify the priorities in endocrinology and endocrine science that have the greatest potential to improve health in Europe. Not only is this valuable for funding bodies, but also as guidance within and beyond the endocrine research community. We want to highlight the attractiveness of endocrinology to early career researchers, and give other stakeholders, such as industry, a clear vision of key areas of healthcare need and opportunities for development.

As well as publishing a synopsis of our findings in *European Journal of Endocrinology*, we will prepare a summary statement for policymakers, funding bodies and industry, using the most appropriate platforms to reach these target audiences.

What particular challenges must EndoCompass address?

Initially, it has been jointly establishing research priorities across the immense breadth of endocrine science. To do this, we have gathered a wide array of experts and adopted a structured approach to select the priorities in each research area. The next step involves distilling these priorities into a clear, compelling message and disseminating it broadly, to engage our diverse stakeholders. Our communication strategy will be crucial in amplifying the impact and reach of our research priorities.

Who is involved, and why?

To develop a 'product' to serve the entire endocrine community meant the whole community needed to be really involved and actively engaged. The ESE Executive Committee decided upfront to ask all our official and unofficial partner societies to contribute, with very successful engagement



EndoCompass

Research roadmap for better hormone health

What is EndoCompass?

EndoCompass is a major collaborative initiative, steered jointly by ESE and the European Society for Paediatric Endocrinology (ESPE), to identify and share the research priorities in endocrinology for the coming decades. Here, endocrinologists give you an insight into the purpose of the project and the activities that are taking place to ensure it reaps rewards for endocrine research and healthcare.

of a long list of [Project Partner societies](#). Crucially, the European Society for Paediatric Endocrinology (ESPE) agreed to be our joint collaborator, enabling us to cover endocrinology across the whole lifespan. All ESE National Partner Societies have been engaged via the [ESE Council of Affiliated Societies \(ECAS\)](#).

To ensure coverage of all major endocrine topics and to recruit the corresponding experts, we structured the project around working groups which largely reflect the [ESE Focus Areas](#), asking the Focus Area Leads to gather corresponding groups of basic, translational and clinical scientists. It was also vital to engage early career researchers and patients, which we achieved via the [ESE Young Endocrinologists and Scientists](#) and the [ESE Patient Advocacy Groups](#). Each working group now includes at least one young researcher, and there is a process to get feedback from as many patient groups as possible.

In summary, we are delighted that more than 150 enthusiastic people are already working on EndoCompass, with more set to join us.

How and when can members of ESE contribute?

ESE and ESPE members have been able to engage with and guide the project since April 2023, when we conducted the big Future of Endocrinology survey. Their responses have already been integrated into the decision-making process for the research priorities, and they will soon be able to see the result of their contributions. The draft roadmap paper will be available to all members around autumn 2024, and their comments will be implemented in the final published version.

When should we expect to see the first outputs?

Key results will be presented at the Joint Congress of ESPE and ESE 2025 in Copenhagen, Denmark, and we plan to publish the scientific paper on EndoCompass in *European Journal of Endocrinology* in summer 2025. In parallel, ESE will launch a campaign including press releases and social media events etc., to ensure all stakeholders are aware of EndoCompass.

When will EndoCompass start to make an impact?

Even before publication of the paper, the project's key conclusions will be used to drive the discussion at national and European levels regarding areas of need in endocrine research. The aim is for these priorities to be reflected in EU calls as soon as 2028. We should see some of the fruits of our labours in the call for the next EU flagship programme for research and innovation, which is due to start in 2028.



Martine Cools

EndoCompass Steering Committee Member, responsible for co-ordinating ESPE's participation



Please introduce yourself

I am Chair of the ESPE Science Committee, and a member of the ESPE Council. I am Head of the Department of Paediatric and Adolescent Endocrinology and Diabetology at Ghent University Hospital, and Full Professor in Paediatric Endocrinology at Ghent University in Belgium. My interests include gonadal development, variations of sex development, adrenal and pituitary pathology, paediatric gynaecology, Turner syndrome, and care for transgender youth.

Why do we need the EndoCompass project now?

Apart from diabetes and obesity, endocrine-related diseases are poorly known by the broader public and insufficiently targeted by large European funding programmes. Nonetheless, the endocrine system has a major impact on our daily functioning and many of the current societal challenges impact on our endocrine system. Thus, strengthening endocrine research can be part of Europe's response to some of the major concerns of today, e.g. environmental disruption, climate change, mental stress, fertility decline, healthy ageing etc.

What positive change can EndoCompass bring?

Many adult diseases have their origin in childhood, or even in fetal life, and/or can emerge in individuals through transgenerational effects. EndoCompass has the power to illustrate and further explore this concept, through collaboration between basic and clinical researchers with a background in paediatric or adult endocrinology. EndoCompass can show that investing in healthy fetuses may have positive effects, even more than 40 years later! I hope this insight will be a game changer in European health-related research.

Why are you excited to be involved?

I enjoy the very broad scope of the project, and the mutual knowledge exchange between paediatric and adult endocrinology, which has the potential to bring these two disciplines much closer to each other.



Heleen Jansen

Early career researcher in the EndoCompass Thyroid Working Group



Please introduce yourself

I am a medical doctor, currently finishing my PhD in the Endocrine Laboratory at Amsterdam University Medical Center in The Netherlands. My research focuses on improvement and interpretation of thyroid hormone measurements.

Why do we need the EndoCompass project now?

It will help to critically determine research priorities among a diverse group of researchers in the same area of endocrinology. European collaboration is increasingly important, and the EndoCompass project will allow us to align research in these areas at an early stage.

What positive change can EndoCompass bring?

I have noticed that research priorities are often similar among groups from various countries or institutions. EndoCompass could increase collaboration between groups, thereby enhancing the quality of research. It is important that researchers in the field, who will ultimately conduct the studies, identify the long term priorities, to provide guidance to policymakers or funding institutions.

Why are you excited to be involved?

The EndoCompass project offers a unique opportunity to discuss current and future research projects in my area of interest, from various countries and perspectives. It has broadened my knowledge regarding opportunities. The atmosphere within the Thyroid Working Group is open and stimulating, giving me a platform as a young researcher to contribute and have an impact on research.

Working Groups



Key outputs

- Detailed research roadmap of the nine areas of endocrine science: to be the basis for policy
- High level summaries based on the roadmap, showing areas of need where investment can yield the highest societal return

Mehul Dattani

Lead for Paediatric Endocrinology in the EndoCompass Pituitary Working Group



Please introduce yourself

I am Professor of Paediatric Endocrinology at the UCL Great Ormond Street (GOS) Institute of Child Health and a Consultant Paediatric Endocrinologist at GOS Hospital for Children and UCL Hospitals, London, UK. I have been a long-standing member of the ESPE Council, and am Meeting Host for ESPE 2024. While my research focuses on hypopituitarism in children and adolescents, my clinical work spans paediatric endocrinology.

Why do we need the EndoCompass project now?

Funding for endocrine research has remained challenging. It is important for the paediatric and adult endocrine communities to form a cohesive, collaborative group, to enable funding and continued progress in the era of multi-omics. I hope EndoCompass will attract young investigators into endocrinology and fuel their enthusiasm.

What positive change can EndoCompass bring?

It will reinvigorate research and foster collaborations between basic and clinical scientists and paediatric and adult endocrinologists. Given the recent discoveries in genomics, the potential for translational research with the development of novel therapies is considerable. Additionally, the advent of single cell technologies, proteomics and epigenomics is likely to change the endocrine research landscape, ultimately benefiting European healthcare. Research into endocrine disruptors could improve health at a population level.

Why are you excited to be involved?

It will enable me to work with leaders across endocrinology to answer key research questions and improve patient care. I hope collaborations in other areas will be similarly productive, and that EndoCompass will herald a new era of research in endocrinology.

Find out more at www.ese-hormones.org/roadmap



EJE

Adrenal adenomas, dementia and psychiatric/sleep disorder risk

A recent article in *European Journal of Endocrinology* has examined the relationship between adrenal adenomas and risk of psychiatric and sleep disorders.¹

Adrenal adenomas are commonly encountered in clinical practice, with a prevalence of 3–7% in adults undergoing abdominal computed tomography.^{2–4} Most adrenal adenomas represent non-functioning adrenal adenomas (NFA), but 20–50% of patients demonstrate mild autonomous cortisol secretion (MACS), which is diagnosed based on abnormal post-dexamethasone cortisol (>1.8µg/dl).⁴ Patients with MACS and NFA have been reported to have an increased likelihood of cardiovascular risk factors and events, fractures, frailty, and mortality.^{2,4,5} Association of NFA and MACS with cognitive impairment and psychiatric and sleep disorders has been suggested, but scarcely investigated.

Recently, we conducted a population-based study in Olmsted County, MN, USA, to assess the relationship between adenomas and psychiatric and sleep disorders in patients diagnosed with adenomas between 1995 and 2017, and in age- and sex-matched referent subjects. Both patients and referent subjects were followed for a median of 6.8–7.2 years. We assessed the association between adenomas and psychiatric disorders at index date (time of diagnosis with adrenal adenoma). In addition, the study looked at development of new disorders during follow-up. The associations were measured using hazard ratios and 95% confidence intervals (CIs) using Cox regression models for the cohort analyses. Multivariable analysis that included age, sex, socioeconomic status, body mass index, tobacco usage and substance abuse was performed.

Our findings

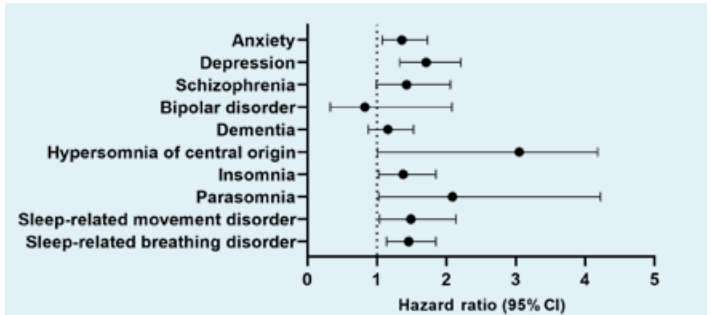
At index date (baseline), patients presented with higher odds of depression, anxiety and substance abuse compared with referents. However, when adjusted for substance abuse, no association between adenomas and psychiatric and sleep disorders was found.

During a median follow-up of 6.8 years, and after adjusting for age, sex, socioeconomic status, body mass index, tobacco usage and substance abuse, patients demonstrated a higher risk of psychiatric and sleep disorders as follows [adjusted hazard ratio (CI 95%)]: depression [1.7 (1.3–2.2)], anxiety [1.4 (1.1–1.7)], insomnia [1.4 (1.0–1.9)], sleep-related breathing disorders [1.5 (1.1–1.9)], hypersomnias [2.1 (1.0–4.2)], parasomnias [2.1 (1.0–4.2)] and sleep-related movement disorders [1.5 (1.0–2.1)] (Figure).

No cross-sectional or longitudinal associations between the diagnosis of adrenal adenoma and dementia were found in this study.

Discussion and conclusion

One of the reasons for noted association between adrenal adenomas and risk of psychiatric and sleep disorders is subtle abnormal cortisol production. Based on reported prevalence of adenoma subtypes, patients with adrenal adenomas in this population-based study probably included a mixture of patients with NFA (60–80%) and those with MACS (20–40%).² Hypercortisolism of various degrees has been recently reported to be associated with several psychiatric disorders, and reported difficulties with sleep.⁶



Incidence of dementia, psychiatric and sleep disorders in patients with adrenal adenomas versus referent subjects.

Another possible explanation is that a higher burden of co-morbidities and frailty, reported in patients with adenoma in this and previous studies, contributes to development of psychiatric and sleep disorders.^{1,6} The diagnosis of adrenal adenoma may also be a cause of stress for patients and contribute to anxiety, depression and sleep abnormalities.

The strengths of this study include a population-based design, a relatively long median follow-up of almost 7 years, and adjustment for multiple confounding variables. As participants in this study were predominantly white, the results may not be generalisable to more diverse populations. Another limitation is that classification of patients with adrenal adenomas based on dexamethasone suppression test results was not possible. Additional studies need to stratify the risk based on the degree of autonomous cortisol secretion and examine the impact of adrenalectomy on the reversal of psychiatric and sleep disorders.

Irina Bancos

Mayo Clinic, Rochester, MN, USA

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Insights from the Editor

This study presents both interesting and challenging results, suggesting an increased risk of sleep and psychiatric disorders in patients with adrenal incidentalomas (AI). For example, depression risk was 1.7-fold increased compared with a referent population.

It comes with the obvious strengths and weakness of an epidemiologic registry-based approach when studying disease – outcome relationships. Strengths include the large number of patients and the length of follow-up, whereas misclassification of the outcomes may have introduced some bias in the estimations. The authors also mention the potential weakness that dexamethasone suppression test data were not available to distinguish MACS from non-functioning AI. This is true, but if hypercortisolism (MACS) is the mechanism underlying the association between AI and sleep and psychiatric diagnoses, this would mean that the real association is even stronger, given that MACS accounts for only ~30% of the patients with AI who were included. Thus, this is a very interesting association, in need of further exploration.

Olaf M Dekkers

Deputy Editor, *European Journal of Endocrinology*

EJE Clinical & translational endocrinology from around the globe



Cortisol co-secretion in primary aldosteronism

A study in *Endocrine Connections* shows that co-secretion of cortisol and aldosterone affects 30% of cases of primary aldosteronism, particularly older patients or those with larger tumours.¹

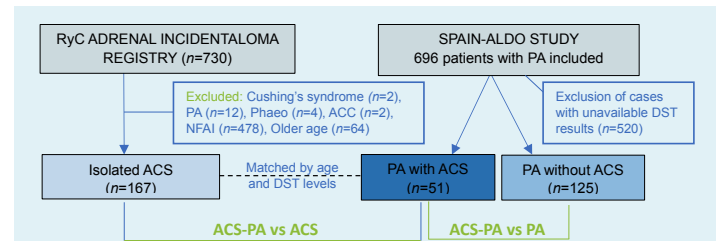
Primary aldosteronism (PA) is the most common cause of secondary hypertension. Aldosterone excess is linked to a higher cardiovascular morbidity and mortality compared to patients with essential hypertension. Similarly, mild autonomous cortisol secretion (ACS) is associated with a detrimental cardiometabolic profile. Thus, it is reasonable to expect that the co-existence of cortisol and aldosterone hypersecretion (the Connshing syndrome²) would be linked to a worse cardiometabolic profile than aldosterone and cortisol hypersecretion independently.

Connshing syndrome and cardiometabolic and surgical outcomes

Several studies have reported cases of cortisol and aldosterone co-secretion, also known as the Connshing syndrome.² The prevalence of this condition varies greatly in research, ranging from 13 to 78%, depending on how ACS is defined. However, the rate of adrenal-related synchronous aldosterone and cortisol excess is approximately 20–30%, based on the definition proposed in the 2023 ESE clinical practice guidelines (cortisol post-dexamethasone suppression test (DST) >1.8µg/dl).³

The co-existence of PA and ACS has been associated with a higher cardiometabolic risk than PA alone, including an increased prevalence of impaired glucose metabolism and renal complications, among other co-morbidities. In fact, the presence of ACS was found to be an independent risk factor for kidney damage in one of these studies.⁴ On the other hand, it has been reported that co-secretion of cortisol can lead to misinterpretation of non-adrenocorticotrophin-stimulated adrenal venous sampling, misclassifying lateralised cases as bilateral.⁵ Cortisol co-secretion associated with a lower rate of complete clinical response after adrenalectomy has also been described.⁶

In the current study,¹ we evaluated the prevalence of ACS in patients with PA and its implications for cardiometabolic and surgical outcomes. For this purpose, we conducted a retrospective multicentre study of patients with PA (SPAIN-ALDO study) who underwent a 1-mg DST during diagnostic work-ups in 21 Spanish tertiary hospitals. We defined ACS as cortisol post-DST >1.8µg/dl in the absence of specific clinical features of hypercortisolism. The cardiometabolic profile of patients with Connshing



Study population. Reproduced (with additions in green) under CC BY-NC-ND 4.0 DEED licence (<https://creativecommons.org/licenses/by-nc-nd/4.0/>) from Araujo-Castro *et al.*¹ <https://doi.org/10.1530/EC-23-0043> ©2023 The Authors. ACC: adrenocortical carcinoma; NFAl: non-functioning adrenal incidentalomas; Phaeo: pheochromocytoma; RyC: Ramón y Cajal Hospital.

syndrome (ACS-PA group) was also compared with a control group with ACS without PA (ACS group), who were matched for age and DST levels.

Our findings

We found that 51 of the 176 patients with PA included in the study (29%) had associated ACS (ACS-PA group). The cardiometabolic profile of these patients was similar to that of the PA cases without ACS, except for older age and a larger tumour size of the adrenal lesion in the ACS-PA group. When we compared the group of patients with ACS-PA ($n=51$) with the group who had ACS without PA ($n=167$), we found that the ACS-PA group had an eightfold higher prevalence of hypertension and a fivefold higher prevalence of cardiovascular events. Regarding the impact of cortisol co-secretion on outcomes in PA, we found no differences in the proportion of biochemical and clinical cure between patients with ACS-PA and those with PA only (Figure).

Cortisol and aldosterone co-secretion is common in patients with primary PA, affecting one-third of cases. It is more common in older patients with larger tumours. As a result, we recommend screening for hypercortisolism in all patients with PA, especially the elderly and those whose tumours are larger. Patients with ACS-PA had a higher prevalence of hypertension and cardiovascular events than those with isolated ACS. No differences in the cardiometabolic profiles of patients with ACS-PA and those with isolated PA were detected. Patients with ACS-PA and isolated PA have similar surgical outcomes in terms of cardiometabolic profile and hypertension cure and improvement.

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Insights from the Editor

Primary aldosteronism has emerged quite remarkably during my career. It was considered a rare and unusual cause of hypertension at the end of the last century, but today is recognised as the commonest cause of secondary hypertension.

Quite recently, a relatively common variant of this syndrome has been recognised – the dreadfully named ‘Connshing syndrome’ (we really must find something better), in which autonomous cortisol secretion accompanies aldosterone excess. This study set out to confirm this in a large multicentre study, and to investigate the prevalence of cardiovascular events in those with and without cortisol co-secretion.

The most important finding to my mind, and the reason I was keen to see this work published in *Endocrine Connections*, was the observation that cardiovascular events were significantly more prevalent in the co-secretion group. This should allow clinicians to focus cardiovascular screening on this subgroup, with hopefully improved health outcomes and more economic use of resources.

Adrian Clark

Former Editor-in-Chief, *Endocrine Connections*



ESE education and training in 2024

Mirjam Christ-Crain chairs the ESE Education Committee. She will step down in May after four years in the role. Here, we talk to her about the plans that are in place for the coming year of educational events, and the highlights of her time spent shaping ESE's educational provision.

Please tell us about the exciting plans for 2024 events

The opportunities will be diverse! They include ESE Postgraduate Courses and Clinical Updates as well as other events. In a structured way, this covers the whole endocrinology curriculum within two years. We are currently updating the curriculum, jointly with UEMS (the European Union of Medical Specialists), and this will be published soon. The next European Board Examination in Endocrinology, Diabetes and Metabolism will be held towards the end of 2024. Our goal is to make this the formal exit exam for many European countries.

Which speakers are you most looking forward to hearing?

I cannot list all their names, as so many speakers will give excellent talks on different areas. I look forward to seeing young and upcoming speakers alongside the experienced and well known ones.

What is your 'must attend' event?

Aside from ECE 2024, I am particularly looking forward to the ESE Postgraduate Courses. Two are taking place virtually, and one or two in person; this is thrilling, as it has not been possible recently due to the pandemic and other issues. The first in-person course in April is in Tallinn, Estonia, with a very exciting programme!

What events will you encourage your team to attend?

It is a tradition that my team all attend ECE each year. As well as listening to the lectures and sessions, I invite them for dinner; we will have a great time together. This is important for motivation and shows appreciation for all the work they have done!

I also encourage them, like other Early Career Members, to attend the ESE Summer School and as many ESE Postgraduate Courses



Mirjam Christ-Crain

as possible, to give them a solid knowledge of all endocrine topics and prepare them for the European Board Exam (which Switzerland is planning to have as its formal exit exam).

What have you most enjoyed as ESE Education Committee Chair?

There have been many highlights. One certainly is working together with the ESE Team; they do such a great job! It is also fantastic to see so many endocrinologists from different countries, eager to bring ideas to the Education Committee. Discussion within the Committee is always constructive and I thank all the members for their input. If I had to mention one highlight then it would be each of the ESE Postgraduate Courses, including the virtual ones during COVID, which enabled us to interact with many endocrinologists around the world.

I wish my successor (whoever it may be) all the best and a lot of joy! And I will always be there to help when needed.

'It is fantastic to see so many endocrinologists, eager to bring ideas to the Education Committee.'

Keep up to date with all ESE educational activities at www.es-e-hormones.org/education-and-training

Save the date

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

11th Baltic Congress of Endocrinology & ESE Postgraduate Course

18–20 April 2024
Tallinn, Estonia

European Hormone Day

24 April 2024

ESE Spotlight on Science: Endocrine Disruptors

25 April 2024

ECE 2024

26th European Congress of Endocrinology

11–14 May 2024

Stockholm, Sweden

ESE Spotlight on Science: Thyroid Cancer

20 June 2024

ESE Summer School 2024

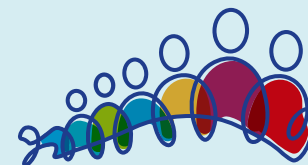
23–26 June 2024

Innsbruck, Austria

11th EYES Annual Meeting

6–8 September 2024

Helsinki, Finland



Connecting Endocrinology Across the Life Course

Joint Congress of ESPE & ESE 2025

10–13 May 2025

Copenhagen, Denmark

Deadlines

5 April 2024

12th EYES Annual Meeting

Applications to host

22 April 2024

ECE 2024

Early Bird registration



European Society of Endocrinology