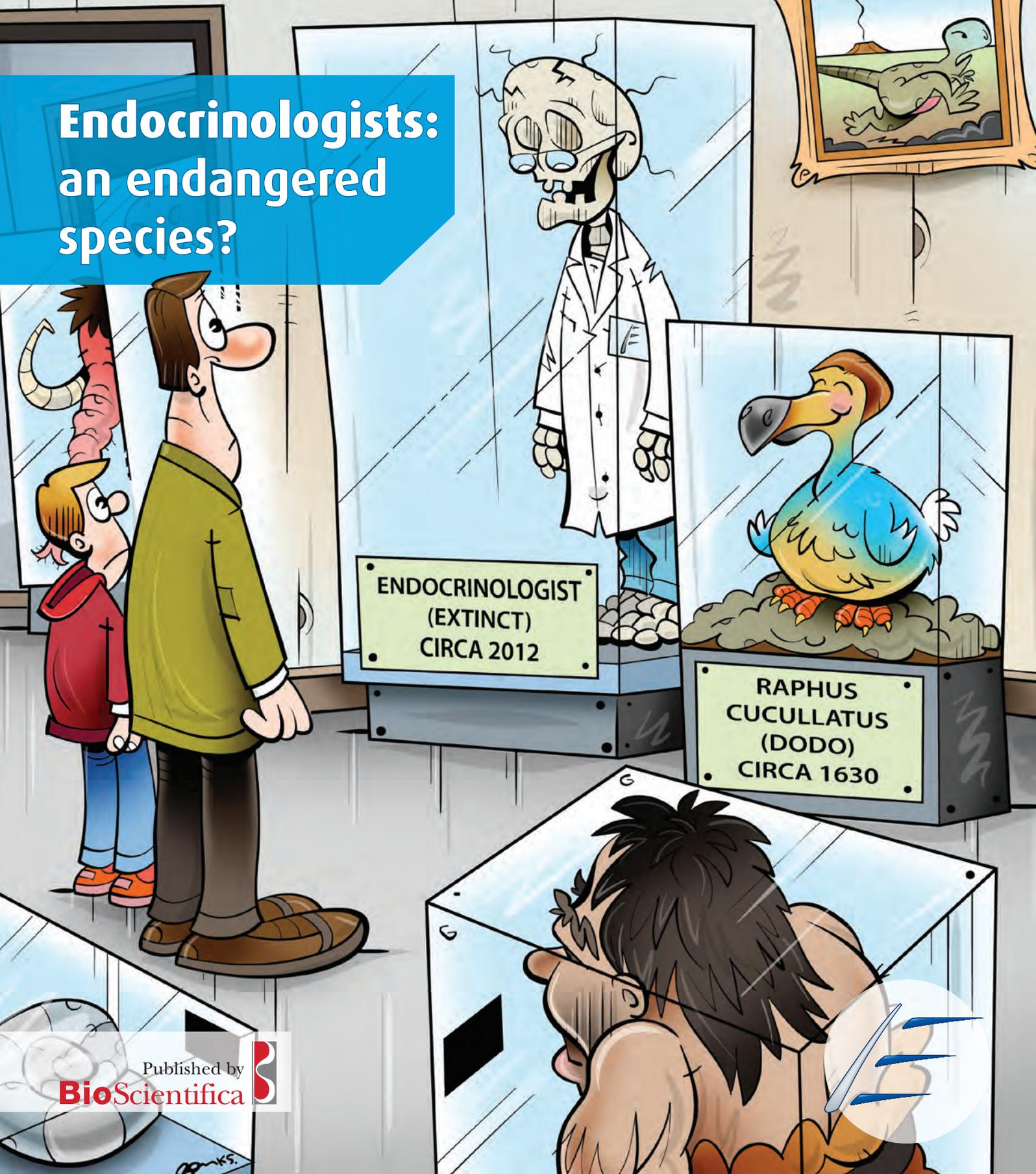


# The Endocrinologist

THE NEWSLETTER OF THE SOCIETY FOR ENDOCRINOLOGY • ISSUE 106

WINTER 2012/13

**Endocrinologists:  
an endangered  
species?**





► We all know that a career in endocrinology can be a hard path to follow, but are the clinicians amongst us really heading towards extinction? Recently published data from a survey of clinical trainees has led Jyothis George (University of Edinburgh) to wonder whether the consultant endocrinologist is an endangered species. Turn to page 15 to hear his views. You'll also discover what the Society, and others, are doing to divert this potential evolutionary course. We look forward to your views ([info@endocrinology.org](mailto:info@endocrinology.org)).

Good communication skills are helpful in any arena. The Society can support you through its partnership with the Voice of Young Science network (part of the charitable trust, Sense About Science). This gives our trainees the chance to hone their ability to talk about science, and workshop details are on page 4. Of course, some people are already great at communicating publically on endocrine topics. On page 6, you can read about the Society's recent successes with topics ranging from risk-taking to bone, sleep and our response to the environment at science festivals up and down the country.

The art of constructive feedback is another aspect of good communication. Clearly, this is no problem for those involved in Interdepartmental Peer Review. The scheme is now 10 years old, and Petros Perros' review (page 7) confirms the process is a positive experience for all involved.

A long-established endocrine centre that has very much focused on the future is the calling point for this issue's 'Endo Train'. See page 16 for Steve Ball's vivid portrayal of the clinical service, training and research taking place in Newcastle-upon-Tyne. In nurse's news, Katherine Powell of Norfolk and Norwich University Hospital recounts the benefits, for both patient and clinical team, of a new clinic aimed at improving the service for patients presenting with a thyroid lump (page 10).

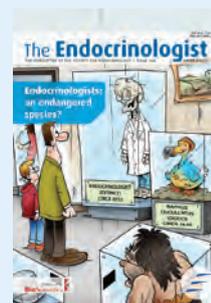
This issue of *The Endocrinologist* also features some new initiatives. A feature series, 'Everything you need to know about...', aims to cover those concepts and techniques that everyone suddenly seems to be talking about, but most of us would like to understand better, especially if we want to exploit them! Victoria Salem, Paul Matthews and Waljit Dhillon get us off to a great start on the topic of functional MRI and its use in endocrinology (page 12). Let us know about other topics you'd like to see covered.

Our second new series opens with 'Anderson on AMH' (page 14), as we ask endocrinologists to reflect on their favourite hormones. Richard shares his views about the major discoveries, current controversies and future challenges in this field. We're planning to cover the 'classics' in this series (particularly those enjoying renewed interest), as well as more recent additions to the endocrine family, so do get in touch if you'd like to tell us what's hot about your favourite hormone.

Other changes include a new Editor, as my term of office finishes at the end of 2012. I've had a fascinating glimpse into the world of magazine publishing and I'm grateful to the whole editorial team, but especially Miles Levy, Andy Lowe and, latterly, Tracey Curtis, for their enthusiasm, imaginative contributions, help and support. I've really enjoyed working with them to plan each issue and help shape the evolution of *The Endocrinologist*, but I now know I'd never make a journalist (not keen on writing to tight deadlines – and I have a feeling mine weren't even that tight!). Miles takes over from January; I wish him and the new Associate Editor, Tony Coll, every success.

MELISSA WESTWOOD

The Society welcomes contributions and article suggestions; contact the Editorial office at [info@endocrinology.org](mailto:info@endocrinology.org). Deadline for news items for the Spring 2013 issue: 21 December 2012. Deadline for news items for the Summer 2013 issue: 1 March 2013.



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Company Limited by Guarantee  
Registered in England No. 349408  
Registered Office as above  
Registered Charity No. 266813

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**BioScientifica**  
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**NEW  
EVENT**

COMING SOON

## Society for Endocrinology Fellowship Training Workshop

► Are you a postdoctoral researcher or clinical fellow requiring assistance with your career development? Then the Society's Fellowship Training Day is for you.

This career development event aims to provide you with the skills required to:

- ▷ obtain fellowships designed by funding bodies to aid your progression to junior faculty and gain independence
- ▷ negotiate and cope with the transition to junior faculty once you have successfully obtained such funding.

The event will take place over the same weekend as the Career Development Workshop on 18–20 October 2013 at the Milton Hill House Hotel in Oxfordshire.

FREE to trainee members of the Society for Endocrinology.

## Clinical Committee activities

The Society's Clinical Committee arranges a wide range of activities to support, nurture and represent people who are considering specialising in endocrinology and those already in clinical practice. Society members can now read the a summary of the latest minutes from the June 2012 committee meeting at [www.endocrinology.org/clinical/committee/index.aspx](http://www.endocrinology.org/clinical/committee/index.aspx).

## Your image on a journal cover!

Do you have any exciting endocrinology-related images? If so, we want them!



We are launching a Cover Art Competition for *Journal of Endocrinology*, *Endocrine-Related Cancer* and *Journal of Molecular Endocrinology*. Winners will be selected by the Editors-in-Chief of the journals and will have their imagery featured on the front cover of an issue, both in print and online! Winners will be cited in the journal and will receive a professionally printed copy of the journal issue featuring their scientific image.

To enter the competition, email your images to [joe@endocrinology.org](mailto:joe@endocrinology.org), [erc@endocrinology.org](mailto:erc@endocrinology.org) or [jme@endocrinology.org](mailto:jme@endocrinology.org), accompanied with a short caption of 25–30 words explaining what the image depicts and who should be acknowledged for its production. Images should be of high quality and resolution of at least 300 dpi at the final published size (279 mm × 216 mm).

By submitting an image you warrant that you own the copyright and agree that images may be used in promotional material. Images not selected for use may still be used by the Society for Endocrinology and BioScientifica for promotional purposes.

## Congratulations

Professor Peter Selby has been elected Chair of the Joint Royal Colleges of Physicians' Training Board Specialist Advisory Committee, and sits on the Society for Endocrinology Clinical Committee in that capacity.

We thank the following for the latest contributions to the Society for Endocrinology's public website You & Your Hormones ([www.yourhormones.info](http://www.yourhormones.info)).

- ▷ Dr J Charnock (Manchester)
- ▷ Dr A Kalhan (Cardiff)
- ▷ Dr K Murphy (London)
- ▷ Miss A Psichas (London)
- ▷ Dr C Quattrini (Civitanova Marche, Italy)
- ▷ Mr D Ramai (New York, USA)
- ▷ Dr C Sadler (Derbyshire)
- ▷ Dr A Taylor (Leicester)
- ▷ Dr L Yang (London)

SOCIETY NEWS

- SOCIETY CALENDAR**
- 26 February 2013  
**National Clinical Cases**  
London
  - 18–21 March 2013  
**Society for Endocrinology BES 2013**  
Harrogate
  - 16 May 2013  
**Regional Clinical Cases**  
Newport
  - 16–17 September 2013  
**Society for Endocrinology Endocrine Nurse Update**  
Stratford-upon-Avon
  - 18–20 October 2013  
**Career Development Workshop & Fellowship Training Day**  
Oxfordshire
  - 4–6 November 2013  
**Society for Endocrinology Clinical Update**  
Bristol
  - 24–27 March 2014  
**Society for Endocrinology BES 2014**  
Liverpool

## WITH REGRET

We are sorry to announce the death of Dr Alan Blackshaw, who was a Senior Member of the Society.

# Voice of Young Science

▶ The Society for Endocrinology is now an annual partner of Sense About Science's 'Voice of Young Science' (VoYS) network, which enables early career researchers to work together to engage in the public debate on science (an exercise which calls on the energy and determination of youth, as readers are no doubt aware!).

This enables us to send some of our trainee members to the VoYS 'Standing up for Science' workshops, which give attendees an insight into how science is portrayed in the media and how they can inform public debates. Several trainee members have attended so far during 2012 in Manchester, London and Glasgow.



We think these workshops are a great way of enhancing skills in science communication and getting involved in public engagement with science – but don't take our word for it, here's some feedback from members who've attended:

- ▶ 'I particularly enjoyed the Q&A section with professional journalists. They were intelligent, sharp and genuinely interested in science (to my surprise!). It was interesting to learn the importance of science from a different angle, and what makes a good science story.'  
BUYU LU, WARWICK
- ▶ 'I would recommend this workshop as it provides important skills for all those engaging in research.'  
IAN SEETHO, LIVERPOOL

- ▶ 'I am now aware that the media play a strong role in changing the public's perception about science, and that young scientists, even in their early career, are able to make changes to the world of science, and be responsible for communicating better information to the public.'  
GRACE FARHAT, EDINBURGH
- ▶ 'One point raised by the panel was that when we talk about "bad science journalism" we're actually just talking about "bad journalism"...'
- ▶ '...We should all try and engage with the media a little bit more – most of the stories I've heard from people who do have been positive. If we don't do our bit to help where we can, we can hardly complain about the results.'  
SIMON REES, BIRMINGHAM

The next VoYS workshop will be held in March 2013 in Manchester – Society members can apply for a priority place as well as a travel grant of up to £200. For further details see [www.endocrinology.org/grants/grant\\_senseaboutscience.html](http://www.endocrinology.org/grants/grant_senseaboutscience.html)



A new VoYS publication *Peer review: the nuts and bolts* is aimed at early-career researchers. It provides a quick reference guide to how peer



review works, the challenges it faces and how you can get involved. As an annual partner of VoYS, the Society supported its publication. You can download a copy free from the Sense About Science website [www.senseaboutscience.org](http://www.senseaboutscience.org)

Register for news and announcements at  
[www.endocrineconnections.com](http://www.endocrineconnections.com)

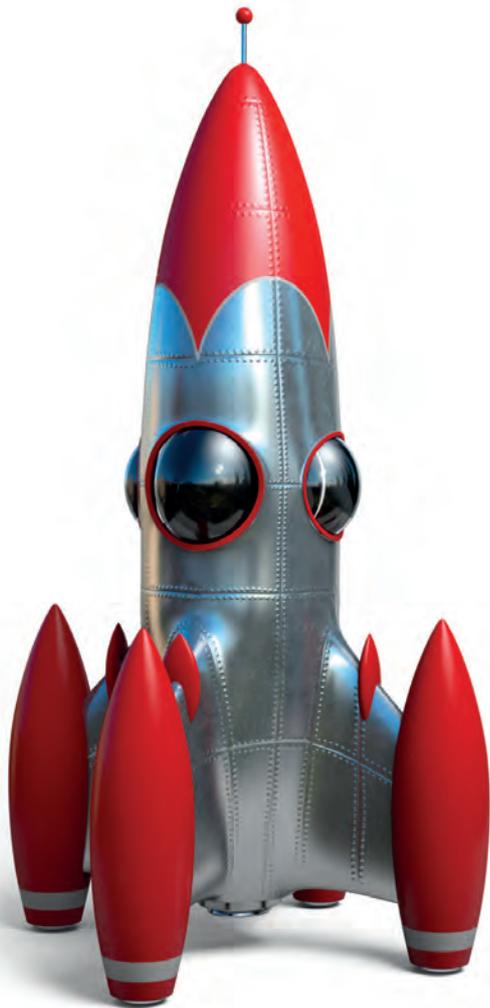
# Endocrine CONNECTIONS

*An Interdisciplinary Open Access Journal*



## Will you be one of the first 200?

Half price fees for the first 200 papers accepted in *Endocrine Connections*!



Endocrine Connections is a new Open Access journal from the European Society of Endocrinology and the Society for Endocrinology.

Endocrine Connections publishes original quality research in all areas of endocrinology, with a focus on papers that have relevance to its related and intersecting disciplines and the wider biomedical community. The journal considers basic, translational and clinical studies.

The journal will be led by Dr Jens Sandahl Christiansen, Professor of Medicine at the University of Aarhus, and Consultant in the Department of Medicine at Aarhus University Hospital.

### OPEN FOR SUBMISSIONS

[www.endocrineconnections.com/submit](http://www.endocrineconnections.com/submit)



OPEN  ACCESS

Reach Further

# All the fun of the festivals...

As well as funding events organised by members (see the report on our Public Engagement Grants in the last issue of *The Endocrinologist*), the Society hosts a number of public talks at science festivals throughout the year. In 2012, we journeyed to Edinburgh, Cheltenham and Aberdeen.

## Edinburgh International Science Festival

April saw our annual excursion to Edinburgh, where we were joined by Professors Philippa Saunders (Edinburgh), Joe Herbert (Cambridge) and Alan McNeilly (Edinburgh), to discuss the biological actions of sex steroids.

After a brief introduction by Professor McNeilly, which touched on the applications of reproductive biology (namely the new panda breeding programme at Edinburgh zoo), Professor Saunders discussed some of the myriad physical effects of the sex hormones. Many in the audience were surprised to learn that the sex steroids exist in a complex balance in both males and females. A lot of endocrine conditions are characterised by disruption of the hormonal balance, and Professor Saunders conveyed this to the audience using examples such as PCOS.



Professor Herbert then took to the stage with an appropriately lively talk on the young male: especially his risk-taking behaviour and the role of testosterone. Professor Herbert's talk addressed the 'winner effect' in sports and politics, and included an

uncanny comparison between courtship displays in birds and military posturing.

The event closed with a question and answer session which showed how well the audience got to grips with the processes discussed, including subjects such as breast cancer and autism. The Edinburgh International Science Festival is the longest running science festival in the UK and in 2013 will be celebrating its 25th anniversary. We are pleased to announce that we have just been accepted onto the 2013 programme for an event on obesity, so watch this space!

## The Times Cheltenham Science Festival

In June, we were honoured to be Festival Partners at the 2012 Cheltenham Science Festival, one of the UK's premier science communication events. The Society for Endocrinology, in association with the Society of Biology, sponsored two events.

The first examined the biology of bones. We were thrilled to be joined by Dr Neil Gittoes (Birmingham) and Professor Juliet Compston (Cambridge) who took us on a fascinating tour through the formation and breakdown of bones, and the medical and societal consequences of what happens when this process goes wrong. The insightful and informative nature of the talks captivated the audience and generated some intriguing discussions. However, perhaps the best feedback from the event was overhearing audience members discuss the lifestyle changes they

intended to make to improve their bone health as they departed, inspired by these talks.

Our second event ventured into a totally different area, exploring evolutionary endocrinology. With Professor Lord Robert Winston (London) in the Chair, we were taken on a captivating journey to discover how where we live in the world has shaped our evolutionary development. First, Professor Jonathan Rees (Edinburgh) discussed how climate and migration have altered hair and skin colour, particularly focusing on the evolution of red hair. He was followed by Professor Mark Thomas (London) who looked at how lactose tolerance has evolved in the human population. The fascinating trio of talks was drawn to a close by Professor Angela Clow (London), who examined the physiological effects that day length can exert on us, including seasonal affective disorder and the cortisol secretion cycle. These three talks gave the large audience of over 230 much food for thought and questions came thick and fast.

## British Science Festival 2012

The British Science Festival, organised by the British Science Association, travels the country bringing a packed programme of science talks and activities to a different city each year. This year we were pleased to travel to Aberdeen to join the Biological Sciences section with an event on 'The Science of Sleep'.



Chaired by Professor Paul Fowler (Aberdeen), Dr Chris Idzikowski (Edinburgh) led the audience of 150 through ways of sleeping to better health. His early work with Emeritus Professor Ian Oswald (Edinburgh, 1929–2012) on the 'restorative hypothesis' that deep sleep is important for physical health whilst REM sleep is important for mental health, formed the basis of his introductory lecture. He then moved on to 'the science of parasomnias', a journey through some of the early work into the more unusual sleep-related behaviour disorders where the subject might walk around, act out their dreams, eat, engage in sexual activity or become temporarily paralysed upon waking, among others. With time for questions at the end, the audience was keen to learn more about shift work and risk management, depression and chronic fatigue syndrome.

TOBY STEAD



We would like to thank all the speakers for participating in these events. If you would like to suggest an idea for a public event to the Society, please email us at [public@endocrinology.org](mailto:public@endocrinology.org).

# 10 years of Interdepartmental Peer Review

► **The Society for Endocrinology and Professor John Bevan started the Interdepartmental Peer Review scheme more than a decade ago. It has flourished and produced some spectacular results (see John Bevan's article in *The Endocrinologist*, issue 96, 2010).**

Stepping into his shoes three years ago was daunting, but exciting too. The scheme has received additional resources from the Society since John's time, with Debbie Willis and Natasha Archer now on the team. We are achieving our target of reviewing three centres per year, the proformas for capturing data have been updated and the definitions of standards have been refined. As IT has improved in most hospitals, there is an emphasis on capturing more of the available data. The hospitals' management is now formally involved in the peer review process and endocrine nurses are an invaluable addition to the peer team.

## What is the scheme?

It entails a detailed review of endocrine services of a major endocrine centre and a representative 'feeder' district general hospital (DGH) by fellow endocrinologists and endocrine nurses. The purpose is to gain an objective insight into the centre's achievements and difficulties and support colleagues in making improvements.

## What are the first steps?

A centre approaches the Society requesting a visit. A preparatory phase follows, during which the centre is required to produce data and specific information about its services. Peer reviewers are identified, and a date is set.

## What does the visit involve?

It takes two days, and includes a visit by the peer reviewers to the centre and a half-day visit to one of the feeding DGHs. The peer reviewers meet and interview staff and colleagues from other disciplines that interface with endocrinology, a management representative and a patient.

## What happens afterwards?

The peer reviewers prepare a report identifying the strengths of the units and areas that could be improved. The report is forwarded to the centres.

## When should a centre be peer reviewed?

Any time is a good time. Sometimes centres think they must resolve existing difficulties beforehand. This is a misconception, and centres that experience significant difficulties are most likely to benefit.

## Can I become a peer reviewer?

Peer reviewers are senior endocrinologists and endocrine nurses who are Society members and have experience in appraisal. You do not need to be based in a major centre; in fact, we try to have a peer reviewer from a DGH in every visiting team. It is interesting to meet colleagues in their place of work and to see how differently we sometimes approach common problems. I always come away having gained something, which I can bring back to my own practice.

If you would like an assessment of the performance of your endocrine team, or if you think your centre is relatively under-resourced, then please get in touch via [www.endocrinology.org/about/projects/peerreview.html](http://www.endocrinology.org/about/projects/peerreview.html), where you can learn more about the scheme.

PETROS PERROS

## Good clinical practice seen in recent visits

### Brighton

- ▷ Appointment of a multidisciplinary team (MDT) teaching co-ordinator to support undergraduate teaching using endocrinology as a paradigm of multidisciplinary practice.
- ▷ One-stop thyroid nodule clinic incorporating a cytopathologist, surgeon and radiologist.
- ▷ The metabolic bone disease and osteoporosis MDT delivers a highly effective service extending beyond medical disease management to embrace falls, syncope and fracture prevention.
- ▷ Development of an electronic patient record system for patients with endocrine disease.

### Edinburgh

- ▷ Excellent integration of NHS and academic consultants to deliver a unified endocrine service from two sites.
- ▷ Excellent multidisciplinary interaction at both sites, including multidisciplinary 'one-stop' thyroid lump clinic, and neuroendocrine tumour and pituitary MDTs.
- ▷ High quality higher training in endocrinology, characterised by maximisation of diabetes and endocrine training time with fulfilment of general internal medicine training requirements. An in-house education programme features 'morning prayers', comprehensive post-clinic case discussions, the Thursday review of the week's cases with trainees and full involvement in the unit's clinical activities and associated MDTs.

- ▷ The Edinburgh Centre for Endocrinology benefits enormously from integration of the clinical academics and the world-leading research that is carried out in the Queen's Medical Research Institute under the leadership of senior academic endocrinologists. Care pathways have been developed jointly by endocrinologists, clinical biochemists and primary care.

### Glamorgan

- ▷ Thyroid cancer clinic in a DGH setting working together within the regional MDT framework.
- ▷ The endocrine team's written policy on which patients to discharge to primary care and when, classified by disease, and the accompanying letters to GP and patient.

### Cardiff

- ▷ Endocrine dynamic test protocols are comprehensive, appropriately referenced and updated in the past 12 months.
- ▷ Weekly multidisciplinary clinical meetings meet the clinical and educational needs of the unit. One benefit of the interaction between clinical biochemistry and endocrinology is development of a protocol to avoid frequent repeat thyroid function tests.

### Dundee

- ▷ Commendable clinical service, in particular the joint pituitary and thyroid nodule clinics, and the highly personalised service for thyroid cancer patients.

# 'iNternationality'

FROM OUR SCIENCE COMMITTEE CORRESPONDENT

► **So I got myself an iPhone\*. I have moved on. Tired of being mocked by children, colleagues and strangers on the train about the old world device that had served me so well for so many years, I have entered the polyphonic world of global glee.**

Things are different now. Never mind the neuroendocrinology behind the addiction to check persistently if I have another message of international, day-stopping importance (...what do you think?), my upgrade has imbued me with a range of superpowers.

I seem not only to be able to end a call with my chin, but also to be able to alert the emergency services at the same time as unlocking the screen. I can now chuckle ironically to myself as, head down, looking at a blue dot in a palm-sized glow world to find out where I am, I walk into a lamp post. Such fun.

In truth, my critics were right and there is no going back. It is a palpable joy to be able to find information so readily in whichever unlikely place you find yourself. The world has never seemed so small and with open access so correctly on the rise, data are but a finger flick away.

Yet there remains a need to interact and communicate in a way that cannot be done though a keypad. I discovered today on a news website that if my new technological world leaves me feeling cold I can get myself a 'wearable social media vest' ([www.bgr.com/2012/10/05/like-a-hug-jacket-facebook-likes](http://www.bgr.com/2012/10/05/like-a-hug-jacket-facebook-likes)). A 'like' on a well known social networking site will, via wireless technology, inflate said jacket and you will be 'hugged'. Pretentious whimsy

perhaps, but maybe the artist is hinting at something a little deeper, in that however advanced the augmented reality of technology becomes, sentient humans require more than visual input to make sense of – and feel they belong in – the world.

People still need to meet in the flesh. Consider some of the projects you are working on. How much easier do things run if you have met your collaborators in person to discuss what is going on? Reflect a little upon the power of the corridor conversation to point you in a different direction. The same is true of conferences; watching the story 'played live' then discussing the finer points with your mates afterwards can be far more rewarding than sitting in an office hunched over a 10-inch tablet. The rush of delivering a cracking talk to an appreciative audience should also be celebrated.

The Science Committee plays a major part in shaping the contents of meetings throughout the year. We come together and discuss how you as an endocrine community can do the same. We are not a closed shop of self-interested parties, but strive to put together quality programmes of decent science from wherever it originates. As you travel the world, be it real or virtual, and come across exciting and interesting endocrinology, let us know via whichever medium you have to hand and we'll see if we can help spread the news.

TONY COLL

*\*Other highly connected, electronic hand-held devices are available.*



# New HE website promotes Open Education Resources



► This summer, the Society of Biology received funding from the Higher Education Academy and JISC through their Open Education Resources (OER) Programme. We were to work with our Special Interest Group, the Heads of University Biosciences (HUBS, [www.societyofbiology.org/hubs](http://www.societyofbiology.org/hubs)) to identify, collect and promote UK OER to the bioscience community. Through this project we have recently launched a new higher education (HE) teaching website at <http://heteaching.societyofbiology.org>.

OER are learning, teaching and research resources, freely available for the community to use and adapt, that have been released under specific intellectual property rules. Although some of these resources are located in specific sites such as Jorum ([www.jorum.ac.uk](http://www.jorum.ac.uk)), the UK's national repository for OER, many excellent teaching resources are hosted directly on institutions' own websites and may require extensive searching to find. This project allows us to identify resources and create signposts to them for the teaching community via a new website, reducing the time spent searching the web, ensuring access to quality teaching resources, and introducing those who are new to OER.

Working closely with the HUBS Executive Committee to ensure the project meets the needs of those working in HE, we have focused on resources that support practical biology. Over the summer we surveyed the biosciences community and, following our suggestion that we focus on practical biology teaching resources, respondents felt that lab and field work protocols, data-handling exercises,

videos of techniques and multimedia alternatives to wet lab work would be the most useful resources to feature.

Feedback from those already using OER highlighted that, although there were a number of very good resources available, there was huge variety in quality and a great deal of searching and sorting were needed to find high quality materials. To address this, we have included an element of peer review in the project, recruiting a team of experts in the bioscience teaching community to review all the resources we find.

When asked about the main barriers to creating OER, the overwhelming response was unsurprisingly a lack of time, but many replied that they did not know how to go about releasing their teaching materials as OER, or even whether their institutions would allow this. Resources such as the JISC OER infokit (<https://openeducationalresources.pbworks.com/w/page/24836480/Home>) and the STEM OER Guidance wiki (<http://stemoer.pbworks.com/w/page/6111366/STEM%20OER%20Guidance%20Wiki>) provide information on using and creating OER, covering copyright and intellectual property issues, and 'dos' and 'don'ts' for creating your own resources.

Setting up this new website to promote bioscience OER has just been the start of this project for us, and we look forward to working with you all in the future. We will be adding new resources as they are released to keep the website up to date. If you are creating resources, or know of a great resource that we have missed, then please let us know via the 'Submit resources' section of the site.

*EVA SHARPE, HE POLICY OFFICER, SOCIETY OF BIOLOGY*

## Society of Biology accreditation: call for assessors

Degree accreditation by the Society of Biology will open for the first round of applications across the whole of the biosciences on 1 January 2013, and Society of Biology is now seeking assessors.

They are particularly keen to hear from applicants in industry, as accreditation focuses on a period of practice and people with industrial experience will add another dimension of expertise.

Further information and an application form can be found online at [www.societyofbiology.org/education/hei/accreditation/accreditationassessmentpanel/](http://www.societyofbiology.org/education/hei/accreditation/accreditationassessmentpanel/)

## US Endocrine Society Laureate Awards

The Endocrine Society makes a number of awards each year to endocrinologists at all levels of their careers. See [www.endo-society.org/awards/LaureateAwards/index.cfm](http://www.endo-society.org/awards/LaureateAwards/index.cfm) for details and consider applying. The Society for Endocrinology will provide supporting documentation for your application upon request, contact [members@endocrinology.org](mailto:members@endocrinology.org)

## New CEO for Understanding Animal Research



Wendy Jarrett is the new CEO of Understanding Animal Research (UAR). UAR aims to improve understanding of the humane use of animals in biomedical research in the UK. Wendy has spent the last three years as Associate Director of External Communications at NICE, having previously worked on the issue of animal research, both with the Coalition for Medical Progress and with UAR.

► It was lovely to see so many of you at Endocrine Nurse Update (ENU). I hope you all found it an enjoyable and useful meeting. Thanks again to all the speakers and to the Society staff for their hard work. See you all again next September?

I would like to take this opportunity to congratulate Nicola Ellis from Bradford, who received her Certificate of Adult Endocrine Nursing at the ENU meeting. If you are interested in working towards this qualification, please contact Julie Cragg at the Society for information on the necessary criteria.



Nicola Ellis receives her certificate from Nikki Kieffer

Thanks to Katherine Powell from Norfolk and Norwich University Hospital for her interesting article in this issue on setting up a one-stop thyroid lump clinic, thus streamlining the service, improving patient care and altogether making what must be a worrying time for the patient a more positive

experience. And who knows, perhaps even the coffee machine is working now!

Please keep telling us what you are doing. We are always looking for articles for our page in *The Endocrinologist*. It may be that someone is thinking of setting up a similar service to one you have set up, or may be struggling with a similar problem that you have overcome. Reading about your successes (or even your failures) will be helpful to them. So many of us work in isolation and are grateful for the chance to contact others who are doing similar things for advice and help. I look forward to hearing from you!

Sondra Gorick is retiring from the Nurse Committee after four years and I would like to thank her for her considerable contribution during this time. We also welcome new members from January: Julie Andrew, Louise Breen and Sofia Llahana. I very much look forward to working with them.

Have a very happy holiday season.

NIKKI KIEFFER, CHAIR, NURSE COMMITTEE

## One-stop thyroid lump clinic

► In October 2010, at the Norfolk and Norwich University Hospital, we launched a new and (what we hoped would be) much improved service for patients presenting with a new thyroid lump. The idea came from Dr Swords, our lead consultant in endocrinology, who wanted to introduce this change to the existing service in order to provide a more streamlined approach.

### Achieving our aims

Primarily we wanted to improve patient experience, but also to reduce the number of unnecessary thyroid ultrasound examinations and fine needle aspirations, without losing sensitivity for high risk nodules. At 18 months after its inauguration, the medical and surgical outcomes of the service were encouraging, but it was important to evaluate the patients' perception of their experience and to ensure that this was what they wanted. This formed an equivalent part of our service evaluation.

Geographically, Norfolk is a large rural county. Many areas have limited public transport and many patients have to travel long distances to attend their hospital appointments. With this in mind, we felt that if all aspects of the initial investigations could be co-ordinated to take place on the same day, this would ease some of these problems for the patient. It would also reduce the time between initial consultation and the results of any scans/biopsies etc., which in turn would help to reduce anxiety.

### The new approach

In the new service, patients are asked to have routine blood tests before their first clinic appointment, so that these

results are available at the consultation. They are also given my name and direct contact number as their key worker, to answer any questions or concerns they may have at any stage during their investigations and/or treatment. Although not all patients have needed to access this part of the service, there have been some who have said that they found it invaluable, where a quick phone call to a nurse can allay unnecessary anxiety, or answer questions that they forgot to ask at the time of the consultation.

On the day of the appointment, the patient sees the Consultant, or Specialist Registrar, with me present. Again, I can clarify any queries the patient may have and make sure they understand the plan of care and any information they have been given. A specialist ear, nose and throat doctor is available to perform a laryngoscopy on the same morning, if required. Likewise, we have designated ultrasound slots for these patients, again on the same morning, at which biopsies can be performed if necessary. These slots can be filled by inpatients if they are not needed by the thyroid lump patients, so no time slots get wasted.

Another aspect of my role in this clinic is to ensure that the patient is booked appropriately into each department, that the whole process runs smoothly, and that the patient understands where they have to be and what to expect at each stage.

### Evaluation

As I mentioned, it was important that this service provided what patients wanted, so as part of its evaluation we devised an anonymous questionnaire which was given to the first 50

patients. This included questions such as whether the patient understood the reason for their appointment; whether they needed an ultrasound scan, and if so, was it done on the same day; and likewise, whether the patient needed a biopsy, and again, whether this was done on the same day. Patients were asked whether they were pleased to have had all the tests done during one visit, and if indeed they had been aware of the possibility of several investigations being performed, as we realised that the longer appointment time may not suit everybody. We also wanted to know whether the patient knew who their key worker was.

These questions required a simple tick box yes/no answer and provided some useful information showing, for example, that 98% of patients had understood beforehand the purpose of their appointment, 72% knew who their key worker was and 70% understood they may have additional tests on the same day. Furthermore, 100% of patients were pleased to have had all their tests done in a single visit.

#### Positive feedback

These answers provided some very useful information, but probably most gratifying of all were the comments patients made in the free text box on the questionnaire. The word 'efficient' cropped up many times, as well as comments such as 'great to only have to take one day off work', 'saved so much time and expense', 'slick and



timely'. In fact, of all the many comments received, there was only one negative comment and that was that the coffee machine wasn't working in the waiting area!

This would suggest that, from the patients' perspective, their experience has improved and we feel that, through streamlining the pathway, the care has also improved. The clinic is going from strength to strength with numbers rising from initially seeing four new patients to now regularly seeing six new patients and sometimes up to eight. In fact, a positive story all round!

KATHERINE POWELL

## Your Society, your journals

► The Society for Endocrinology is a prestigious not-for-profit society that was founded in 1946 by endocrinologists who had published in *Journal of Endocrinology*. *Journal of Endocrinology* was founded in 1939 as a response to the growth of endocrinology. At the time, the editor of another journal perceived the only problem with its launch as being 'that there are only about six endocrinologists in the country!'

*Journal of Endocrinology* has since developed in line with members' needs and in response to changes in our field of study. It has been joined by *Journal of Molecular Endocrinology*, which will celebrate its 25th birthday in July 2013, *Endocrine-Related Cancer*, the leading journal in its field, and, most recently, *Endocrine Connections*, launched to bridge the disciplines that interact with endocrinology and cover the broad scope of the entire subject. Since

1994, *Clinical Endocrinology* has been an official journal of the Society, publishing original articles and reviews which focus on the clinical aspects of the field.

Remember that members of the Society for Endocrinology can enjoy free online access to the current content of *Journal of Endocrinology*, *Journal of Molecular Endocrinology*, *Endocrine-Related Cancer* and *Clinical Endocrinology*, and also that all content published in *Endocrine Connections* is open access, and as such is free to all. Visit [www.bioscialliance.org](http://www.bioscialliance.org) to gain member access.

'The launching of the *Journal of Endocrinology* and the founding of the Society for Endocrinology' by Lord Zuckerman, written in 1984 to mark the 100th volume of the Journal, is a fascinating read. You can find it at [www.endocrinology.org/about/history.html](http://www.endocrinology.org/about/history.html)



## Your research

High impact research published by our members

This article by Brown *et al.*, published in *Journal of Molecular Endocrinology*, looked at the role of visfatin in metabolism. The authors reported for the first time that visfatin has a definite role in insulin receptor signalling in the pancreatic  $\beta$ -cell. Visfatin is thus important in multiple aspects of pancreatic  $\beta$ -cell biology.

JEP Brown, DJ Onyango, M Ramanjaneya, AC Conner, ST Patel, SJ Dunmore & HS Randeva 2010 Visfatin regulates insulin secretion, insulin receptor signalling and mRNA expression of diabetes-related genes in mouse pancreatic  $\beta$ -cells. *Journal of Molecular Endocrinology* **44** 171–178.

EVERYTHING YOU NEED TO KNOW ABOUT...

# functional MRI

► **Functional magnetic resonance imaging (fMRI) has become a leading technique to map brain activity in cognitive neuroscience. Here, we briefly describe the basic principles of fMRI and how it is now being utilised as an important research tool in the field of endocrinology.**

## How it works

MRI utilises magnetic fields to manipulate and measure signals from protons (hydrogen nuclei). The subject being scanned lies within the bore of a strong magnet. All of the protons in the body attempt to align with this fixed, external magnetic field. Additional magnetic fields, in the form of pulsed radiofrequency (RF) radiation, are applied in order to excite the aligned protons. As they 'relax' back towards alignment with the static external field, they produce their own RF signal which can be measured in the receiver coils. This relaxation processes comprises two time constants, T1 and T2, which are tissue-specific. By altering the timing of successive RF excitations, the measured signal can be weighted towards highlighting T1 or T2 differences between adjacent tissue types, thereby providing contrast.

Blood oxygen level dependent (BOLD) fMRI is an adaptation of structural MRI which makes use of the haemodynamic response to neuronal excitation in order to measure localised brain activity. The blood flow response to neuronal activation in the brain always

overcompensates, such that the localised ratio of oxygenated to deoxygenated blood in activated brain regions paradoxically increases. Oxygenated blood has less of an effect at diminishing T2 signal, and hence activated brain regions appear brighter on T2-weighted protocols. More recently, arterial spin labelling techniques have been developed,

which measure cerebral perfusion, using specialised RF pulses to magnetically 'label' blood as it enters the brain.

## fMRI in endocrinology

Within the field of endocrinology, fMRI has been utilised in two major areas: to investigate central glucose sensing and the aetiology of hypoglycaemia unawareness and, in obesity research, to help delineate the brain processes which underlie appetite.<sup>1,2</sup>

Glucose ingestion causes a dose-dependent decrease in the hypothalamic BOLD fMRI signal in healthy humans, a response which becomes blunted in patients with type 2 diabetes, raising the possibility that inappropriate hypothalamic processing of nutrient availability may be

involved in the aetiology of the disease.<sup>3</sup> Conversely, activation of the hypothalamus in healthy volunteers rendered hypoglycaemic with insulin infusion is seen prior to the release of counter regulatory hormones. Hypoglycaemia also activates a number of corticolimbic structures, such as the amygdala, which are thought to mediate the cognitive effects of hypoglycaemia, and this response is blunted in patients with hypoglycaemic awareness.<sup>4</sup>

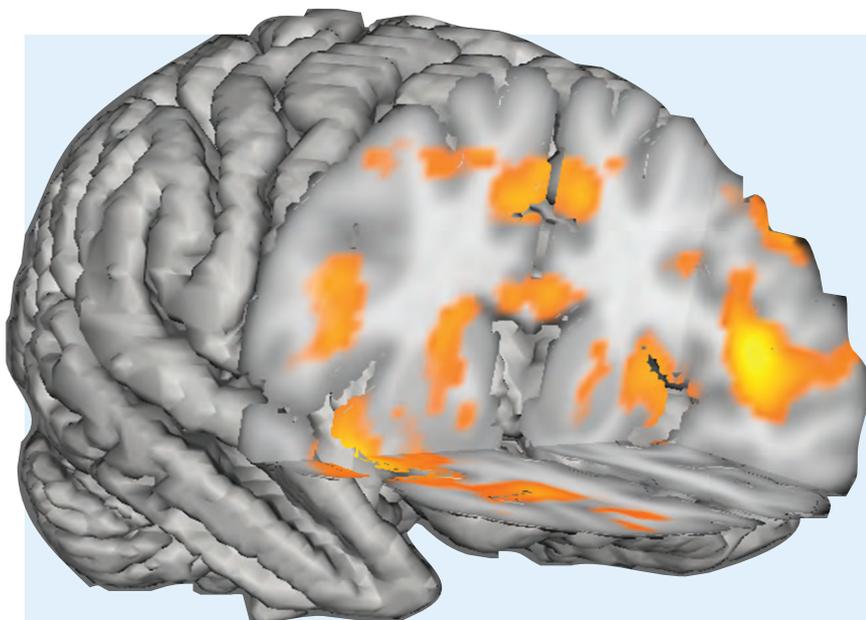
## Explaining appetite

There is a greater body of work surrounding the use of fMRI to study human appetite. The earliest studies, over a decade ago, examined regional activation patterns between the fed (satiated) and fasted (hungry) state, and revealed that brain activation in response to visual food cues within corticolimbic reward structures, such as the amygdala, nucleus accumbens and orbitofrontal cortex, is augmented by hunger.<sup>5,6</sup> This reward network, most extensively studied for its role in addiction, is now understood to play an important role in coding the emotional salience of food. Parallel studies revealed that images of food induce enhanced reward-area activation in obese subjects, but that activation in response to eating is diminished, suggesting a discrepancy between anticipatory and consummatory food reward processing as a possible aetiological factor in obesity.<sup>7</sup>

More recently, the neuroendocrine factors underlying such findings have been investigated. Gut-derived hormones and the appetite-inhibiting adipokine leptin were originally described as conveyors of information about the body's nutrient and energy availability, acting at the hypothalamus to regulate the homeostatic control of food intake. fMRI has since been used to demonstrate that they additionally modulate corticolimbic reward centres in humans. Thus, PYY (a potent appetite-inhibitory hormone released post-prandially from the gastrointestinal tract) and leptin have both been shown to attenuate reward network activation in response to projected images of food, whereas ghrelin (the only known appetite-stimulating gut hormone) increases it.<sup>8,9,10</sup>

We have recently demonstrated that dual anorectic gut hormone infusion (PYY and GLP-1) to fasted, healthy human volunteers reduces neuronal activity across a number of reward areas in a similar pattern to that observed following feeding (see Figure).<sup>11</sup> Put simply, anorectic gut hormones reduce the appeal of food in a similar manner to the effects of a meal. In that study, the plasma levels of PYY and GLP-1 achieved following infusion were comparable with those measured in patients who have undergone gastric bypass surgery, hinting at the likely neuronal mechanism for the observed reduction in

*'Within endocrinology, fMRI has been utilised to investigate central glucose sensing and the aetiology of hypoglycaemia unawareness and, in obesity research, to help delineate the brain processes which underlie appetite'*



Three-dimensional representation of corticolimbic brain areas where fMRI reveals neuronal activation in response to pictures of food. We demonstrated that the appetite-inhibiting gut hormones PYY and GLP-1 reduce food cue invoked signal in these areas. When administered to fasted individuals, these hormones can make the functional images resemble that of the brain when fed.

food cravings that is commonly reported in such patients. In summary, fMRI has provided a safe and effective method for identifying the complicated and interconnected system of homeostatic and hedonic drives governing appetite in humans.

#### What next?

The future potential of fMRI in this arena is great. As imaging techniques are refined, it is hoped that the complicated network of brain appetite pathways and the central mechanisms subserving the altered food preferences and sustained weight loss observed following gastric bypass surgery will be delineated. It will also allow a more comprehensive understanding of central glucose sensing and insulin signalling. It is ultimately hoped that this will inform the rational design of safer and effective treatments for obesity and diabetes.

VICTORIA SALEM, PAUL M MATTHEWS AND WALJIT S DHILLO,  
IMPERIAL COLLEGE LONDON

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## SUMMER STUDENTSHIPS 2013

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**Application deadline: 11 March 2013**



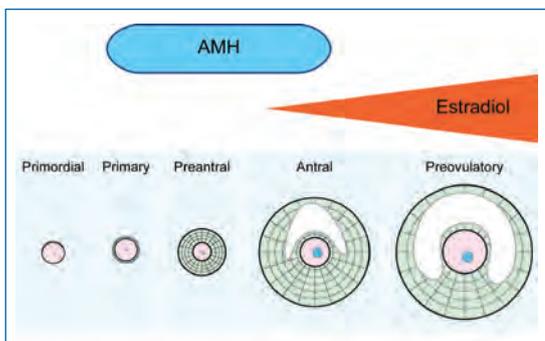
# Anderson on AMH

► I first became interested in gonadal peptide hormones with Nigel Groome's development of the inhibin assays, and inhibin B has told us much about gonadal function in both sexes. I became aware of the potential of anti-Müllerian hormone (AMH) while undertaking a study of post-chemotherapy ovarian function in childhood cancer survivors. This was the first to show that AMH could indicate a reduced ovarian reserve, not previously detectable. This application is still an interest of mine, as is investigating the prospective value of AMH measurement before cancer treatment.

Our ability to assess the endocrine function of the ovary has changed little since the development of immunoassays for gonadotrophins and sex steroids several decades ago. Indeed, the main advance since then has been the widespread adoption of ultrasound. Recognition of the value of AMH in a range of contexts promises to redress the balance in favour of endocrinology, although it is unclear whether circulating AMH has a signalling function.

## Gender-specific differences

AMH is produced by the immature Sertoli cell and is the mediator of Müllerian duct regression in the male. Serum AMH persists in adult men, at concentrations substantially higher than in women. In women it is expressed by granulosa cells from the onset of follicle growth, but crucially it declines relatively abruptly at about the stage when selection for dominance occurs (see Figure).



The AMH knockout mouse shows accelerated follicle activation and AMH may slow FSH-stimulated follicle growth. It is also expressed by cumulus cells, and an interaction with oocyte development

is likely. However, understanding of the function of AMH has lagged behind its clinical application. The sexual dimorphism in gonadal AMH production in the neonate is of value in the diagnosis of disorders of sexual development (DSD).

## Assessing ovarian reserve

The most exciting developments, however, are in the female, where AMH offers a significant advance in our ability to assess the ovarian reserve, when referring either to the primordial follicle pool or to the cohort of growing follicles which can be stimulated by exogenous FSH. Thus, serum AMH predicts the number of oocytes that will be recovered in an IVF cycle. Low AMH identifies those likely to respond poorly with better discrimination than FSH, and the stimulation regime can be tailored to reduce the risk of hyperstimulation in those with high AMH.

While AMH is rapidly becoming a standard investigation prior to IVF, there is a dearth of clinical trials rigorously evaluating its value in comparison with other methods of assessment, notably ultrasound. Determination of antral follicle count is also a standard investigation. As AMH is largely produced by small antral follicles the two tests are essentially measuring the same thing, and which test is used may well be determined by factors such as availability, value of immediacy of result and cost.

## Age-related changes

AMH declines with age, and while data indicate that AMH does indeed have a relationship with time to and age at the menopause, further work is required to clarify its predictive value at a range of ages. Changes in AMH across the lifespan are now described and are essential to its accurate interpretation. They confirm the existence of a neonatal 'mini-puberty' in girls as well as boys, with a slow rise thereafter across childhood, but intriguingly a transient decrease in early puberty. There is a broad plateau in the third decade, followed by a steady decline. The continuing rise after puberty indicates that there is on-going development of ovarian function for perhaps a decade after menarche.

These findings highlight our limited understanding of ovarian function in childhood and adolescence. They also highlight the very wide range of AMH concentrations in normal women, which is possibly to be expected given the variation in follicle endowment, which can differ by 50-fold between women of the same age.

## Diagnosis and prediction

The data from assisted conception indicate that AMH concentrations primarily reflect follicle quantity rather than oocyte quality, and one would not expect AMH concentrations to be related to chance of natural conception. However, one study has indicated that there might indeed be a relationship with fecundity in women in their 30s, although women in their 20s with low AMH have no delay in time to pregnancy. Women with a high

### KEY POINTS

*In neonates, AMH is valuable in diagnosis of DSD  
AMH's most established role is predicting oocyte yield prior to assisted conception*

*It may be of value in diagnosing PCOS, predicting the menopause, and assessing ovarian reserve before and after chemotherapy*

*AMH is likely to be part of the mechanism regulating initiation of follicle growth, and thus a key player in determining reproductive lifespan*

*Other intraovarian roles may include responsiveness of follicles to FSH and selection for follicle dominance*

AMH have a prolonged time to pregnancy, which is probably linked to the potential value of AMH in the diagnosis of PCOS, where AMH concentrations are often markedly elevated (granulosa cell tumours are the other cause of a very high AMH). AMH may well become part of the diagnostic criteria for PCOS. Again changes with age, particularly in adolescence, will need to be considered.

The ability of AMH to reflect the remaining follicle pool has led to exploration of its value in assessing the degree of gonadotoxicity resulting from chemotherapy regimes, and potentially identifying women at particular risk of loss of ovarian function during cancer treatment. This is likely to be of value in the growing field of fertility preservation. AMH

falls rapidly during chemotherapy with little recovery in women who have had significantly gonadotoxic regimes. This also applies in prepubertal girls, in whom other reproductive hormones are of little analytical value.

AMH is becoming widely used in a range of reproductive endocrine contexts, although more rigorous investigation is required to fully identify its value and, no doubt, limitations. The absence of an international assay standard is a significant issue, and it is hoped that the increasing commercial development of assays will drive development and standardisation.

RICHARD A ANDERSON

## Are endocrinologists at risk of being an endangered species?

### A start to the debate

► Readers of *The Endocrinologist* will no doubt be familiar with the challenges faced in managing patients suffering from various endocrine diseases. To deal with this complex need, Britain has developed one of the most comprehensive 5-year clinical training programmes in diabetes and endocrinology. But, as the NHS gets catapulted from one set of reforms to the next, are these specialists getting absorbed into its workforce? The Young Diabetologists' Forum ([www.youngdiabetologists.org](http://www.youngdiabetologists.org)) and the National Director for Diabetes (Dr Rowan Hillson) sought to find out in a national survey – and the picture isn't exactly pretty.

We surveyed 95 specialist registrars who completed training between 2008 and 2010, of whom 73% responded. We found that 62% of respondents had secured substantive NHS consultant posts, 7% held academic jobs, and 16% were in locum positions. Of the 95 people surveyed, eight people had moved abroad – four of these attributed their emigration to the lack of opportunities here in the UK. When asked about alternative career choices, 39% of respondents said they were likely to seek 'general physician' roles, which equalled the number who would consider emigrating. The report of the Young Diabetologists' Forum Survey 2010, published recently in *Clinical Medicine*, is headlined 'One-third of doctors completing specialist training in diabetes fail to secure a substantive consultant post' (Cheer K, George JT, Grant P *et al.* 2012 *Clinical Medicine* 12 244–247).

Several unanswered questions emerge from this first national effort to capture the career paths of clinical endocrinologists. First, would trainees consider a post-Certificate of Completion of Training fellowship in a subspecialty area (e.g. thyroid, pituitary, insulin pumps, reproductive endocrinology) if this improved their future 'employability'? Secondly, how many of the respondents in the survey who were in locum positions managed to get

substantive jobs? Thirdly, what proportion of time is spent by new consultants in the sub-domains of our specialty, i.e. diabetes, endocrinology and general (internal) medicine? The next survey will aim to find out.

Whilst these uncertainties remain, an employment crisis in diabetes and endocrinology is looming. Clear steps must be taken to ensure that the specialist skills acquired by clinicians remain available to people with endocrine diseases, and that our patients continue to receive high quality consultant-led care. Surely, part of the solution would be to attract the best junior doctors to our specialty, to train them to the highest standard and then to ensure a stable career path.

Recognising that attracting the best junior doctors to the specialty is one of the best ways to protect its future, the Society for Endocrinology, Diabetes UK and the

Association of British Diabetologists have all supported a series of 'taster evenings' organised by the Young Diabetologists' Forum. Following a successful pilot in Edinburgh, these events have now showcased our specialty to around a 100 junior doctors yet to choose their specialist training pathway. More of these events are being organised up and down the country. It is not all doom and gloom!

JYOTHIS GEORGE

*Jyothis George is a clinical lecturer in diabetes and endocrinology at the University of Edinburgh. He is a specialist trainee representative on the Clinical Committee and also the chairman of Young Diabetologists' Forum.*

*The Society for Endocrinology is planning to hold an open forum at the 2013 Society BES meeting, in conjunction with all Programme Leads for Diabetes and Endocrinology, so there will be a chance for you to contribute to this important discussion.*

*If you wish to contribute the debate please e-mail [tracey.curtis@endocrinology.org](mailto:tracey.curtis@endocrinology.org) and we will air your views in the next edition of The Endocrinologist*

# Newcastle-upon-Tyne

*There was a time when you could go to any corner of the world and find a ship built in Newcastle. The north east of England has a tradition of manufacturing and export. While the industrial and social landscape has shifted over the last five decades, the tradition continues. Education and science are now key parts of the economic portfolio. Medicine, and specifically endocrinology and diabetes, have been at the forefront: the new ships that set sail from the region's rivers.*

## History

The past is a major factor in shaping culture and identity.

The history of endocrinology and diabetes here has two themes: tradition, and resonance between past and present. In addition, of course, are the clear parallels with football.

Where better to start than Thomas Addison? He was born here in 1793 and also schooled in Newcastle, though he trained and practised in Edinburgh and London. He was probably our first 'big money transfer'!

George Murray, who introduced thyroid replacement therapy to the modern world in 1891,<sup>1</sup> was born here and indeed was appointed physician to the Newcastle Royal Victoria Infirmary (our current site) in 1898. Frederick Pybus pioneered pancreas (and adrenal gland!) transplantation in the 1920s.<sup>2</sup>

It was in the 1970s that perennial Champions' League status arrived under Professor Reg Hall. Born and brought up in the north east, Reg founded an endocrine dynasty, leading clinical and

laboratory studies in areas including thyroid autoimmunity and the use of somatostatin in man. He mentored a generation of endocrinologists as radioimmunoassay and, latterly, molecular endocrinology opened doors to new areas of medicine and clinical science.

When Reg left Newcastle (another high profile transfer) momentum wasn't lost. Mike Tunbridge, George Alberti, Pat Kendall-Taylor and Peter Baylis brought us through to the new millennium and the current team. The endocrine world is full of colleagues who were trained by these greats and, in turn, have trained others. By this means, many endocrine centres across the world have links with Newcastle, links that speak to the quality of the experience on which they are based and which, in turn, help cement our position.

Memories and loyalties are still strong – a feature of the region. A good day is when I'm reminded by patients of those on whose clinical shoulders we stand, and whose legacy we are tasked to maintain. A less good day (but still one that occurs every month or so) is being asked when Professor Baylis is coming back.

## Current staff

The Adult Endocrine Unit is based around five full-time consultants: Drs Andy James, Petros Perros, Richard Quinton, Steve Ball and Professor Simon Pearce. We have further input from Professor Mark Walker and Dr Dave Woods who have additional commitments in diabetes. Paediatric endocrinology has always been strong here, and we currently have four consultants: Drs Tim Cheetham, Debbie Mathews, Helen Johnson and Kate Owen. The consultant team have flexible roles, with an integrated approach to service delivery and research. As early adopters of adult clinical nurse specialists, Newcastle is fortunate to have two of the most experienced nurses in the UK in Margaret Miller and Margaret Morris.

Endocrinology has close ties with colleagues in clinical biochemistry, human genetics and reproductive medicine. It's common for both trainees and consultants in these specialties to attend clinics and ward rounds, adding value to clinical care and education. We have six consultant colleagues in diabetes: Professors Shaw, Walker, Taylor and Marshall together with Drs Nicky Leech and Gillian Hawthorne. They run a comprehensive community and hospital-based service (including dedicated renal, obstetric and foot care together with cutting edge islet and pancreas transplantation) that complements endocrinology services and training.

## Clinical service and networks

We offer a full range of general and specialist endocrinology, serving the region. Newcastle provides local endocrine services to the city and a comprehensive range of specialist services to the region and north of England, through a series of conventional, multi-disciplinary and nurse-led clinics. These are supported through close working relationships with colleagues in



*The Addison window, Newcastle Medical School*

*New Victoria Wing RVI*



other disciplines: endocrine surgery, neuro- and hepato-biliary surgery, clinical oncology, ophthalmology, and diagnostic radiology.

Our specialty clinics include:

- ▷ Pituitary
- ▷ Neuroendocrine tumours
- ▷ Thyroid eye disease
- ▷ Teenage and young adult
- ▷ Oncology/late effects of cancer treatment
- ▷ Endocrine genetics



Olympic Tyne bridge

While the population of the region is fewer than 2 million people, we are spread across a wide and varied geography. Consolidation of clinical networks to support patient care across this landscape forms a very important, on-going area of development with colleagues across the north east.

While much of the Unit's work is co-ordinated through key multidisciplinary teams, the functional hub remains the Programmed Investigation Unit (PIU). This is where we bring those who need our expertise and our care. This is where our trainees want to come and learn. While the running of PIU has changed over time (we see more patients, with a greater range of problems and with a higher turnover), the ethos behind it has changed very little. Indeed it is a model upon which Newcastle-trained endocrinologists have based similar units across the UK.

### Research

With investigators spread across Newcastle University's three major biomedical research institutes (Cellular Medicine, Genetic Medicine, and Ageing and Health), our research portfolio reflects modern twists on historic themes in addition to specific interests brought by incoming staff:

- ▷ Autoimmune endocrine disease (thyroid and adrenal), natural history and molecular genetics of thyroid and adrenal disease, disease modifying therapy in adrenal failure and thyroid eye disease
- ▷ Molecular genetics of hypogonadism
- ▷ Bioenergetics and muscle function in endocrine disease
- ▷ Cardiovascular hormone response to hypoxic and barometric stress

Many of our research programmes involve active collaboration with colleagues throughout the region. This helps cement a regional approach that we hope provides a successful and sustainable model for the future.

### Training

Newcastle plays a central role in the regional specialty training programme which covers the north east of England. All trainees spend at least one year here, gaining experience in a wide range of general and disease-specific clinics, including an SpR-based urgent access clinic. All have the opportunity for extended training in the PIU. This provides invaluable clinical experience and insights into future roles as a leader of a clinical team. Training in endocrinology runs in parallel with that in general internal medicine and diabetes, giving a rounded experience covering all trainee requirements.

There are abundant opportunities for Continuing Medical Education through local, regional and national training events, which all are encouraged to attend. While clinical time limits involvement in research, our trainees have a good record in presenting at national and international meetings. With support from senior members of the Unit, some take opportunities to co-author reviews and books. Many trainees use their time in Newcastle as a platform on which to develop links for research fellowships. While time is full, all see it as rewarding. People always want to come back.

### The future

What next for us? Continued development, concentration on what we do best, and building on the good relationships we have with colleagues across the region, within our hospital and within our university remain priorities. This can only be good for patient care, training and research. In both Simon Pearce's work on the modulation of autoimmune adrenal failure and Jim Shaw's leading pancreas/islet transplant service I hear the echoes of Addison, Pybus and Hall. But this is very much a new perspective – modern work built on older, traditional themes. While we are aware of our past, we don't live in it. We are now a new hospital built on the foundations of an older one, and while some things don't change, others do.

Speak to those that work or trained here. They are easy to find. And they are our best advertisement.

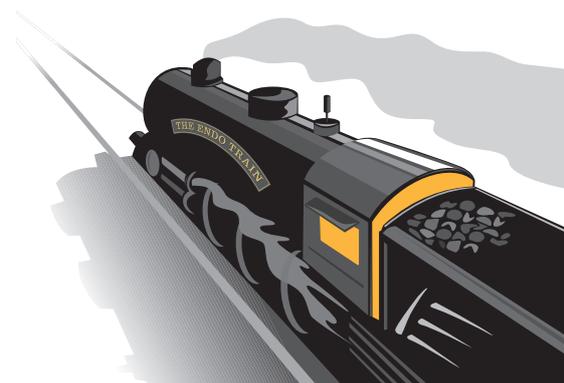
STEVE BALL

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Victoria Wing RVI





Society for Endocrinology

HAVE YOU GOT THE

# Write Stuff?

## UNDERGRADUATE ESSAY PRIZE 2013

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FIRST PRIZE

EXTRA CREDIT WILL BE GIVEN FOR  
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- In addition to the top prize there are a number of runner up and highly commended prizes
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Submission details are available at

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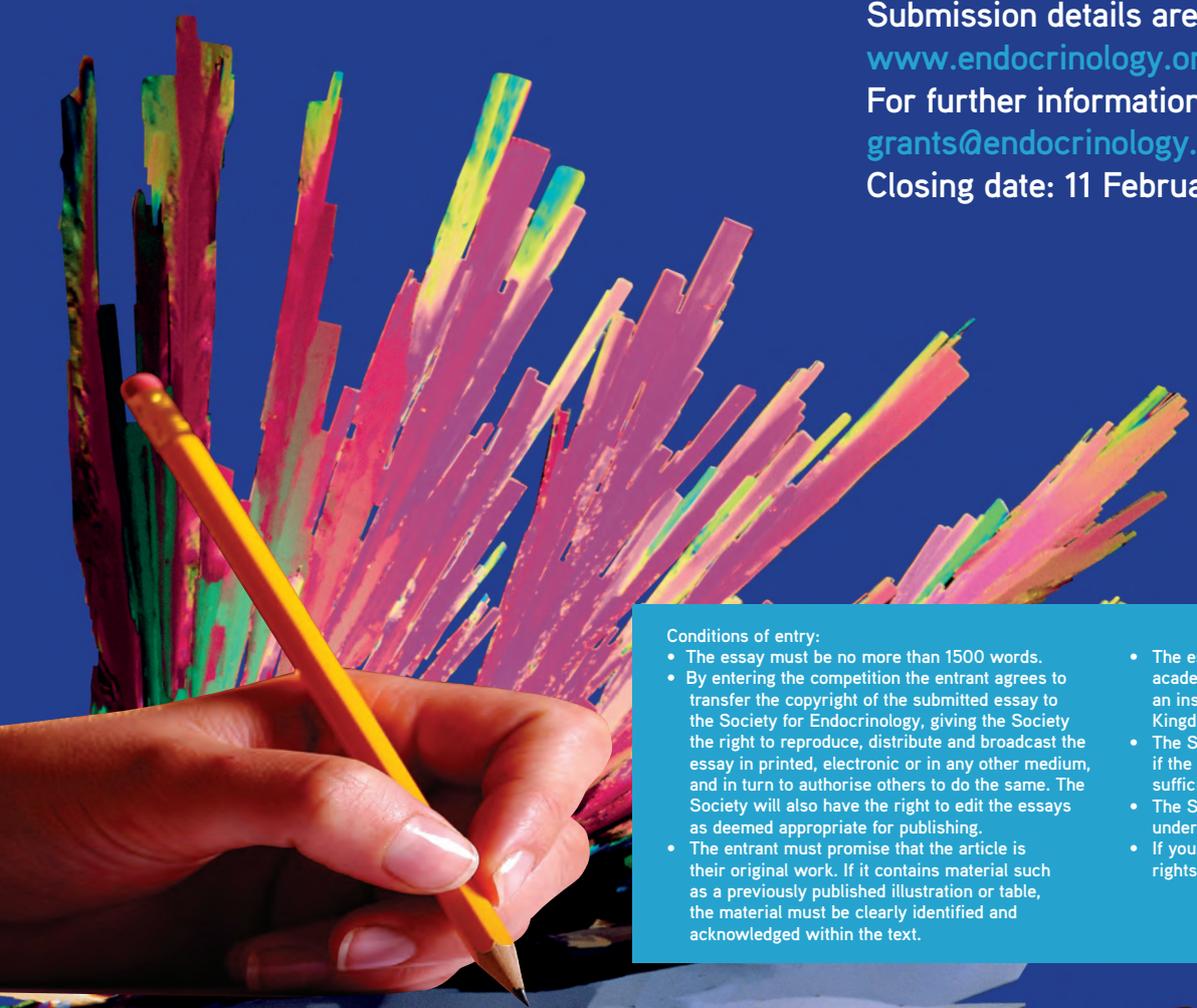
For further information please contact

[grants@endocrinology.org](mailto:grants@endocrinology.org)

Closing date: 11 February 2013

#### Conditions of entry:

- The essay must be no more than 1500 words.
- By entering the competition the entrant agrees to transfer the copyright of the submitted essay to the Society for Endocrinology, giving the Society the right to reproduce, distribute and broadcast the essay in printed, electronic or in any other medium, and in turn to authorise others to do the same. The Society will also have the right to edit the essays as deemed appropriate for publishing.
- The entrant must promise that the article is their original work. If it contains material such as a previously published illustration or table, the material must be clearly identified and acknowledged within the text.
- The essay must have been written in the current academic year by an undergraduate student at an institution of higher education in the United Kingdom or Ireland.
- The Society reserves the right to withhold the prize if the standard of the essays submitted is not of sufficient merit.
- The Society reserves the right to verify undergraduate credentials.
- If your essay is not amongst the prize winners, all rights revert back to the author.



# Hot Topics



## IGFBP2 predicts renal function in diabetes

The IGF family of proteins has been repeatedly implicated in development of diabetic nephropathy, a major complication of diabetes and the most common end-stage renal disease. Among 436 type 2 diabetics, Narayanan *et al.* found that a high IGFBP2 concentration at baseline was associated with a decreased glomerular filtration rate over an 8-year period and an increase in proteinuria, indicative of longitudinal deterioration in renal function.

[Read the full article in \*Endocrine Connections\* 1 95–102](#)

## Overnight dexamethasone suppression test

One limitation of the overnight dexamethasone suppression test (DST) in diagnosing Cushing's is its high false-positive rate, occurring where dexamethasone is poorly absorbed or rapidly metabolised. Improvement of the test by comparison of post-test cortisol and dexamethasone levels has been suggested. Åsvold and colleagues showed that plasma dexamethasone levels during the overnight DST were not associated with post-test cortisol levels. Routine comparison of these levels is unlikely to improve the test.

[Read the full article in \*Endocrine Connections\* 1 62–67](#)



## Preptin effect on insulin secretion

Cheng *et al.* found that preptin promotes insulin secretion in a concentration-dependent manner, and examined the link between preptin and the phospholipase C (PLC)/protein kinase C (PKC) pathway at the cellular level. Their results give a new insight into the actions of preptin, a secreted proIGF2-derived peptide that can induce greater efficacy of signal transduction resulting from PLC and PKC activation through the IGF2R.

[Read the full article in \*Journal of Endocrinology\* 215 43–49](#)

## Lipolysis in *Vgf*–/*Vgf*– knockout mice

Fargali *et al.* examined white adipose tissue (WAT) to determine the effect of targeted germline ablation of VGF on fat pad weight and WAT lipolysis and lipogenesis. *Vgf*–/*Vgf*– knockout mice had reduced body weight, decreased gonadal fat pad weight, and alterations in key lipolytic proteins compared with wild type mice. VGF precursor or selected VGF-derived peptides may dampen sympathetic outflow pathway activity to WAT to regulate fat storage and lipolysis.

[Read the full article in \*Journal of Endocrinology\* 215 313–322](#)



## TSH receptor–autoantibody interactions

Núñez Miguel *et al.* describe the crystal structure of a new human thyroid-stimulating MAb K1–18. They also provide predicted models of K1–18 and a thyroid-blocking mouse MAb RSR-B2 (for which a high-resolution crystal structure is available) binding to the TSH receptor (TSHR) leucine-rich domain. The predicted binding arrangements were validated by the effects of TSHR mutations on MAb biological activity.

[Read the full article in \*Journal of Molecular Endocrinology\* 49 137–151](#)

## HDAC5 and glucose metabolism

Using knockdown of HDAC5, Raichur *et al.* found that histone deacetylase 5 (HDAC5) regulates glucose metabolism and insulin action in both human and mouse myotubes, and that HDAC inhibition in myotubes could increase glucose uptake and basal energy expenditure. As glucose metabolism is dysregulated in metabolic disease states such as obesity and type 2 diabetes, further experiments targeting HDAC5 as a therapeutic strategy for these diseases are needed.

[Read the full article in \*Journal of Molecular Endocrinology\* 49 203–211](#)



## Autophagy and ovarian cancer

Liu *et al.* have shown that arsenic trioxide induces an autophagic pathway in human ovarian carcinoma cells, and can synergise with everolimus (Rad001) to induce cytotoxicity. Targeted therapeutic agents are urgently needed in ovarian cancer, to avoid the significant side-effects of conventional chemotherapy. Rad001 has not shown clinical efficacy as a single agent, but the combination of these two agents represents a new direction for therapy.

[Read the full article in \*Endocrine-Related Cancer\* 19 711–723](#)

## Proteomic analysis of human thyroid cells

Genetic rearrangements in PAX8 and PPARG resulting in overexpression of the fusion protein PFP have been found in follicular thyroid carcinoma (FTC). Li and colleagues performed a full systematic proteome analysis in human thyroid cells transfected with PFP, finding 28 differentially expressed proteins, including several directly involved in malignant thyroid transformation. This is a starting point for the improved diagnosis and targeted treatment of FTC.

[Read the full article in \*Endocrine-Related Cancer\* 19 681–694](#)



## Adjuvant lithium improves RAI efficacy

Adjuvant lithium with radioactive iodine (RAI) in hyperthyroid conditions has remained controversial, with mixed reports on RAI efficacy, and some side effects. Martin *et al.* investigated its effect in patients receiving 500 MBq RAI, and found that the likelihood of cure was 60% greater than with RAI alone. Adjuvant lithium improved the efficacy of RAI in toxic nodular thyroid, as well as supporting its use in Graves' disease.

[Read the full article in \*Clinical Endocrinology\* 77 621–627](#)

## Progressive decline of residual follicle pool

Primary ovarian insufficiency (POI) affects about 1% of women under 40, and is associated with hypoestrogenism and infertility. In some patients, the disease is caused by an autoimmune response against the ovary. Falorni and colleagues have shown that most autoimmune POI patients have a preserved pool of ovarian follicles, which is progressively lost. This suggests that immunomodulatory treatment could benefit these patients.

[Read the full article in \*Clinical Endocrinology\* 77 453–458](#)

HT

HOT TOPICS

*Society members have free access to the current content of Journal of Endocrinology, Journal of Molecular Endocrinology, Endocrine-Related Cancer and Clinical Endocrinology via [www.bioscialliance.org](http://www.bioscialliance.org) Endocrine Connections is an open access journal and as such is free to all.*

**Hypogonadism** – an endocrine issue which causes significant morbidity and substantial reduction in quality of life<sup>1</sup>



**control**  
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**Tostran®** – a simple solution to a serious problem

## Control

- Tostran® returns and maintains hypogonadal patients T levels to normal<sup>2</sup>
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- Tostran® is the only 2% testosterone gel

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The first metered dose



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A simple solution to a serious problem

### Tostran Abbreviated Prescribing Information

#### Tostran (testosterone) 2% Gel Prescribing Information

Please refer to Summary of Product Characteristics (SPC) before prescribing.

#### Presentation

Tostran 2% Gel, contains testosterone, 20 mg/g.

#### Indications

Replacement therapy with testosterone for male hypogonadism when testosterone deficiency has been confirmed by clinical symptoms and laboratory analyses.

#### Posology

The starting dose is 3 g gel (60 mg testosterone) applied once daily at approximately the same time each morning to clean, dry, intact skin, alternately on the abdomen or to both inner thighs. Adjust dose according to clinical and laboratory responses. Do not exceed 4 g gel (80 mg testosterone) daily. Patients who wash in the morning should apply Tostran after washing, bathing or showering. Do not apply to the genitals. Do not use in women, or children under the age of 18 years.

#### Contraindications

Known or suspected carcinoma of the breast or the prostate; hypersensitivity to any of the ingredients.

#### Special warnings and precautions for use

Tostran should not be used to treat non-specific symptoms suggestive of hypogonadism if testosterone deficiency has not been demonstrated and if

other aetiologies responsible for the symptoms have not been excluded. Not indicated for treatment of male sterility or sexual impotence. All patients must be pre-examined to exclude a risk of pre-existing prostatic cancer. Perform careful and regular monitoring of breast and prostate. Androgens may accelerate the development of subclinical prostatic cancer and benign prostatic hyperplasia. Oedema with/without congestive heart failure may be a serious complication in patients with pre-existing cardiac, renal or hepatic disease. Discontinue immediately if such complications occur. Use with caution in hypertension as testosterone may raise blood pressure. Use with caution in ischemic heart disease, epilepsy, migraine and sleep apnoea as these conditions may be aggravated. Care should be taken with skeletal metastases due to risk of hypercalcaemia/hypercalcuria. Androgen treatment may result in improved insulin sensitivity. Inform the patient about the risk of testosterone transfer and give safety instructions. Health professionals/carers should use disposable gloves resistant to alcohols.

#### Interactions

When androgens are given simultaneously with anticoagulants, the anticoagulant effect can increase and patients require close monitoring of their INR. Concurrent administration with ACTH or corticosteroids may increase the likelihood of oedema and caution should be exercised.

#### Undesirable effects

Very common ( $\geq 1/10$ ): application site reactions (including paresthesia, xerosis, pruritis, rash or erythema); common ( $\geq 1/100$ ,  $< 1/10$ ): increased

haemoglobin, haematocrit; increased male pattern hair distribution; hypertension; gynaecomastia; peripheral oedema; increased PSA. Certain excipients may cause irritation and dry skin. Consult SPC for other undesirable effects of testosterone.

#### Pack Size and Price

Packs containing one or three 60 g metered-dose canisters per pack. Price £26.67 per canister.

#### Legal Category POM

Further information is available from the Marketing Authorisation Holder ProStrakan Limited, Galabank Business Park, Galashiels, TD1 1QH, UK.

Marketing Authorisation Number PL16508/0025

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Adverse events should be reported. Reporting forms and information can be found at [www.yellowcard.gov.uk](http://www.yellowcard.gov.uk). Adverse events should also be reported to ProStrakan Limited on 01896 664000.

#### References:

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2. Dumas C. Poster presented at the 25th Scandinavian Meeting of Urology, Göteborg, June 2005

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