Giants should still fear body snatchers
the history of acromegaly

Recent Advances in Adrenal Disease

Also in this issue:
Endo Explorer
visits the University of Cordoba

A Day-in-the-Life of...
A Dublin professor of Endocrinology

WIN WIN WIN!
with the Endo Crossword
**Editorial**

I am writing today as the new ESE President. Before presenting our activities and road map for future developments, I would like first to express my gratitude for the support of the ESE members. In addition to the role of President, three new Executive Committee members were also elected; further information on them can be found on page 2.

I preside over ESE at an exciting time for our Society; ESE has had a successful first five years and is now in a financial position to be able to invest further in delivering public benefit in European endocrinology. I would like to thank all the previous Executive Committee members and the two ESE Presidents, Steven Lambert and, more recently, Elke Niessenlag for their hard work, achievements, and their continuous commitment to the Society.

This plan is being refined and will be published on the ESE website in due course. ESE will have a special focus on:

- Supporting early-career basic and clinical endocrinologists so that they feel part of the European endocrine community and remain active and contributing members of this community as their careers develop.
- Promoting equality of opportunity across Europe by providing a programme of support services, such as education, especially to clinicians and scientists in less advantaged countries.
- Representing and integrating the full breadth of endocrinology throughout its activities, including the core endocrine diseases and also diabetes, metabolism & obesity, bone & calcium, reproduction, cardiovascular, and oncology; and balancing coverage of common and rare endocrine diseases.
- Being the ‘voice of endocrinology’ in Europe, promoting ESE and understanding of endocrinology to endocrinologists, European legislative and funding bodies, and to the public, working in a collaborative way with national and specialist societies.

ESE will achieve these aims in a range of ways and has set key objectives for the five-year period, these will be shared with the ESE membership in due course. It is clear that the support of all members of the Society is needed. It is time that our Sub-committees recruit members outside our Executive Committee. Details of the Sub-committees, including their remit.

**NEWLY LAUNCHED**

ESE has launched an exciting new-look website as part of the Society’s aim to modernise and increase benefits to our members. New sections include: Career Opportunities, Special Interest Group information, a developed Affiliated Society Members section, Educational Videos, Patient materials and much more! You will find the new website at www.ese-hormones.org - take a look and let us know what you think! info@euro-endo.org
I am writing today as the new ESE President. Before presenting our activities and road map for future developments, I would like first to express my gratitude for the support of the ESE members. In addition to the role of President, three new Executive Committee members were also elected; further information on them can be found on page 2.

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Welcome to our new Executive Committee member


Welcome to our new members

Over 845 new member applications were approved by the Executive Committee during ICE/EEC 2012. ESE’s membership is growing each year and we currently have an impressive 2770 members from all over Europe, truly making us the European Hormone Society.

New Honorary members. ESE is pleased to announce that Honorary membership was presented at ICE/EEC 2012 to Professor Wilmar Wiersinga in special recognition of his services to ESE, and to Professor Pierre Chambon in special recognition of his contribution to science. Congratulations to them both.

AGM 2012


ESE ENDO International Endocrine Scholars Programme (IESP) - 2012

An exceptional training experience for young endocrinologists: the successful candidates receive counsel through a unique mentoring programme that helps them find financial support, advice and esteemed training opportunities.

ESE is pleased to announce that the 2012 IESP scholarships have been awarded to:

- ENDO ESE International Endocrine Scholars Programme
  - Carmelo Nuera, Italy
  - Sebastian Michael Schmid, Germany

ESE Travel Bursary
  - Jovana Kalajdzic, Serbia
  - Giampaolo Trivelli, Italy

Congratulations to you all!

Nominations now open for the European Journal of Endocrinology Prize 2013 – the prize of a certificate and €10,000 will be awarded to a candidate who has significantly contributed to the advancement of knowledge in the field of endocrinology through publication. Nominations for the prize close on 8 June 2012.

ESE Meeting Grants – there are still 34 grants of up to €450 available to ESE members! Don’t forget to apply for grants for the upcoming Postgraduate course in Turkey and the Summer school in Bregenz.

NEW! Basic Science Meeting Grant – worth up to €450 each.

ESE JOE/JME Prize update
Congratulations to Dr Li Chan, of the William Harvey Research Institute, London, on winning the 2012 JOE/JME prize for basic endocrinology.

For full details of the criteria and how to apply for ESE grants and prizes, please see the Prizes Grants and Awards page of the ESE website:

www.esendocrinology.org

Introducing ESE’s Basic Science Committee and Clinical Committee

Both Committees have versatile action Ilpo and Pia’s affiliations plans to achieve their goals with their aims detailed below.

ESE’s Clinical Committee:

Advancing and harmonizing clinical practice and research in Europe

1. To play a leading role in the development of guidelines for optimal management of endocrine disorders, and to give guidance on matters in clinical endocrinology, including ethical issues and best practice.

Special Interest Groups have been established to initiate recommendations for treatment and management in specific areas of expertise: 1) monogenic metabolic bone disorders (Chair: Prof. Osten Ljunggren, Sweden), 2) management of polycystic ovary syndrome (Chair: Prof. Renato Pasquali, Italy), and 3) management of poly cystic ovary syndrome (Chair: Prof. Renato Pasquali, Italy).

The Special Interest Groups will present their recommendations in peer-reviewed publications, and at ESE-sponsored symposia 2013–2014.

2. To support all healthcare professionals (clinicians, specialist nurses and allied professions) delivering patient care.

3. To support clinical research in Europe, with a special focus on supporting endocrinologists in less economically developed countries, and to advance quality and equality of patient care in endocrinology across Europe.

Professor Ilpo Huhtaniemi

ESE’s Basic Science Committee:

Promoting basic endocrine science within Europe

1. To establish a European basic endocrine scientists’ network and to recruit basic scientists as members of ESE.

2. To establish a basic science training course programme.

The Summer School on Endocrinology for young scientists will continue as an ESE-sponsored event (see the Dates!). We will also establish a circulating postgraduate course to be held according to topical needs.

3. To establish a high-quality basic endocrine congress series in Europe.

We have joined forces with the Mt St Oddy Symposium on Hormones and Cell Regulation, held annually in Alfacia, France. Travel grants for young ESE members will be available.

4. To establish a funding programme for basic scientists to attend the ESE congresses and courses.

A total of 100 travel grants, €450 each, will be available for basic scientists to attend the European Congress of Endocrinology.

5. To develop a funding programme focused on networking and exchange visits within the European basic endocrinology community.

6. To establish links with other European societies in the field of endocrine sciences.

Professor Ilpo Huhtaniemi

Introducing EYES: European Young Endocrine Scientists

The European Young Endocrine Scientists (EYES), founded in 2011, is a committee under the patronage of the European Society of Endocrinology (ESE) with a primary goal of increasing the mutual exchange of ideas and knowledge between endocrinologists – from basic researchers to clinicians – in the initial stages of their careers.

As an official committee of the ESE, EYES enables endocrinologists from all ESE member societies to actively contribute to the Society’s activities and provides a platform to make young endocrinologists feel welcome at ESE EYES. Therefore assists young scientists in developing and finding their own personal path through the different fields of endocrinology.

EYES emerged from a German initiative called Young Active Research in Endocrinology (YARE) and takes advantage of the existing structures of YARE, including the YARE webpage (www.yare-active-research.eu) and its interactive forum. EYES holds annual meetings exclusively for young scientists where they can present their work, improve presentation skills and establish professional networks. This year, our annual meeting will take place in Dresden, Germany, in October 2012. Participation in EYES activities is free of charge.
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Grants and prizes

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Giants should still fear body snatchers

A recent BMJ article (BMJ 2011;343:d7597) made the case for the skeleton of Charles Byrne, “The Irish Giant”, to be thrown into the sea, almost 230 years after his death.

If Dr John Hunter had opened the skull of Charles Byrne he might have been the first to describe pituitary enlargement in gigantism/acromegaly. The famous American neurosurgeon, Dr Harvey Williams Cushing, also known as the “Godfather of Neurosurgery” (1869–1939) reasoned that Hunter never ventured so far because “his passion as a collector exceeded his thirst for knowledge”. It wasn’t until 1909 that Dr Harvey Cushing, together with Sir Arthur Keith, the curator of the John Hunter museum, opened the skull of Charles Byrne and demonstrated an enlarged sella turcica.

More recently, in 1980, Drs Alexander M. Landolt and Milo Zachmann estimated the “bone age” of Charles Byrne to be only about 17, indicating that he was still growing at the time of his death age 22, implying that he was suffering from (hypogonadotrophic) hypogonadism. Just two years ago, Dr Harvinder S. Chahal and his colleagues at the Department of Endocrinology, Barts and the London School of Medicine, extracted DNA from a tooth of Charles Byrne and demonstrated an enlarged sella turcica.

Department of Endocrinology, Barts and the London School of Medicine, extracted DNA from a tooth of Charles Byrne. From this they identified a germ-line mutation in the ‘aryl hydrocarbon-interacting protein gene’ (AIP). Four contemporary Northern Irish families who presented with gigantism, acromegaly, or prolactinoma were found also to have the same mutation. Using coalescent theory, it was thus inferred that Charles Byrne and these four families with pituitary disorders shared a common ancestor who lived about 57 to 82 generations earlier.

Charles Byrne was determined to stay out of the hands of Dr Hunter and arranged desperate precautions to avoid such a fate.

It’s clear that little has changed in more than 200 years – there’s still an overriding and macabre interest in giants. Endocrinologists, therefore, should warn their acromegalic giant patients: “Watch out! There are still body snatchers about.”

Professor Wouter de Herder
Professor of Endocrine Oncology, Erasmus MC, Rotterdam, The Netherlands
Giants should still fear body snatchers

A recent BMJ article (BMJ 2011;343:d7597) made the case for the skeleton of Charles Byrne, “The Irish Giant”, to be thrown into the sea, almost 230 years after his death.

It was Byrne’s dying wish that his body should be buried deep into the ocean, safe from those 18th Century physicians who wanted instead to dissect and display him. Despite his wishes, Byrne’s skeletal remains have been on display at the Hunterian Museum at the Royal College of Surgeons in London for two centuries. But in their BMJ article, Professor of Medical Ethics, Len Doyal, and Thomas Muinzer, a lawyer, argued that it wasn’t too late to fulfil Byrne’s request to rest in peace at the bottom of the sea. Their pleadings prompted lively debate, both in the BMJ and the world’s media. Charles Byrne suffered from acromegalic gigantism and reached a final height of 2.31 metres (7’ 7”) before his death at the age of 22 in 1783. Just a year earlier he was put on show in London as a ‘curiosity’ that Londoners were willing to pay to see. However, not long after his arrival in London, Charles Byrne was robbed of most of the money he had earned as a side-show exhibit and had contracted “consumption” (tuberculosis) and became an alcoholic. He realized that he was a dying man, but death was not his greatest fear, rather it was the physicians who were eager to obtain his body after death for dissection. One of these surgeons was Dr John Hunter (1728–1793), the “Godfather of Modern Surgery”. Charles Byrne was determined to stay out of the hands of Dr Hunter and arranged desperate precautions to avoid such a fate. Byrne instructed that, after his death, his body was to be sealed in a lead coffin. His loyal friends were to guard it day and night until such time that it could be sunk deep into the sea. Byrne pre-paid an undertaker to ensure that his will would be carried out, but alas it was all to no avail. After his death, the remains of Byrne came into the possession of Dr Hunter. Charles Byrne was put on display in Dr Hunter’s museum 4 years after his death. If Dr John Hunter had opened the skull of Charles Byrne he might have been the first to describe pituitary enlargement in gigantism/acromegaly. The famous American neurosurgeon, Dr Harvey Williams Cushing, also known as the “Godfather of Neurosurgery” (1869–1939) reasoned that Hunter never ventured so far because “his passion as a collector exceeded his thirst for knowledge”. It wasn’t until 1909 that Dr Harvey Cushing, together with Sir Arthur Keith, the curator of the John Hunter museum, opened the skull of Charles Byrne and demonstrated an enlarged sella turcica. More recently, in 1980, Dr. Alexander M. Landolt and Milo Zachmann estimated the “bone age” of Charles Byrne to be only about 17, indicating that he was still growing at the time of his death age 22, implying that he was suffering from (hypogonadotropic) hypogonadism. Just two years ago, Dr Harvinder S. Chahal and his colleagues at the Department of Endocrinology, Barts and the London School of Medicine, extracted DNA from a tooth of Charles Byrne. From this they identified a germ-line mutation in the ‘aryl hydrocarbon–interacting protein gene’ (AIP). Four contemporary Northern Irish families who presented with gigantism, acromegaly, or prolactinoma were found also to have the same mutation. Using coalescent theory, it was thus inferred that Charles Byrne and these four families with pituitary disorders shared a common ancestor who lived about 57 to 66 generations earlier.

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Professor Wouter de Herder
Professor of Endocrine Oncology, Erasmus MC, Rotterdam, The Netherlands

Charles Byrne’s body has undoubtedly assisted the advancement of science, even though his wish was for a private end. He is not, however, the only acromegaly patient to involuntarily provide their body after death for medics and marauders; scientists and sightseers. The practice, or at least the posthumous fascination for giants, has never actually stopped.

Very recently the controversial German anatomist, Gunther von Hagens, tried and failed to gain access to a modern giant so that he could display his ‘plastinated’ remains after death in his travelling museum. The world’s tallest basketball player, acromegalic giant Ukrainian, Alexander Alekseyevich Sizonenko, was 2.39m, 7’ 10.1” when he died in St Petersburg earlier this year at the age of 52. Despite rapidly declining health and living on meager means, Sizonenko declined the offer by von Hagens of a monthly income in exchange for the right to posthumously exhibit his ‘plastinated’ body.

Department of Endocrinology, Erasmus MC, Rotterdam, The Netherlands

A recent BMJ article (BMJ 2011;343:d7597) made the case for the skeleton of Charles Byrne, “The Irish Giant”, to be thrown into the sea, almost 230 years after his death.
AIP mutations and sporadic pituitary macroadenomas

Only 5% of pituitary adenomas are related to genetic or familial causes, including MEN1, and familial isolated pituitary adenomas (FIPA). Mutations of the aryl hydrocarbon receptor-interacting protein (AIP) account for 15–30% of the FIPA kindreds. This study indicates that germline AIP mutations occur in 11.7% of patients < 30 years with sporadic pituitary macroadenomas and even in 20.5% of such patients < 18 years of age, with different pituitary macroadenomas. Testing for germline AIP mutations should be considered in young patients with macroadenomas.


SLC30A8 and type 2 diabetes

The mouse Slc30a8 gene encodes the zinc transporter-8 (ZnT-8). ZnT-8 is thought to be required for providing zinc to allow for proper storage and secretion of insulin. This study detected ZnT-8 in both alpha and beta cells in human pancreatic islets. It also documented that the human SLC30A8 genomic region located in intron 2 contains a conserved islet beta-cell-specific enhancer. The authors speculate that it is possible that SNPs that affect SLC30A8 expression, rather than ZnT-8 function, may influence Type 2 diabetes risk.


Oxidative stress and thyroid cancer

Aerobic organisms have complex antioxidant systems that can counteract reactive oxygen species and free radicals. This study measured the total antioxidant reactive oxygen species and free radicals. There was a time when Córdoba was one of the most influential cities in Europe in terms of politics, culture and science; now many claim that the only remnants are a breath-taking Mosque and picturesque spots. I do not quite agree. Córdoba is well positioned in terms of scientific research, especially concerning our size. Indeed, the University of Córdoba and the Córdoba University Hospital have ranked well in recent national evaluations, despite both institutions being relatively young. Very much in line with the spontaneous, or even serendipitous, way in which many good things crystallized in Spain in the 1980s, the University of Córdoba and its Hospital witnessed the emergence of active groups working in Endocrinology and its related areas, such as nutrition. In basic endocrinology, two major nodes agglomilated: one in reproductive neuroendocrinology; the other in cellular (and later, molecular) endocrinology of the pituitary gland.

In the last decade, our group (departing from the pioneering work of Enrique Aguilar, Francisco Gayán and Leonor Pinilla, who are still very active members of our team) has become increasingly interested in deciphering the neuroendocrine and molecular basis of mammalian puberty. Our growing interest partially stems from our involvement in the National Network for Research in Obesity and Nutrition, CIBERObn, a 2006 initiative of the Spanish Institutes of Health. Similarly, we belong to the recently created Biomedical Research Institute of Córdoba (IMIBIC), named Maimonides after the famous philosopher and medical doctor born in Córdoba in the twelfth century; a liaison that has increased our interest for the implications of our work in translational medicine, as well as our collaborations with clinically-oriented groups.

Well reputed local endocrinology and metabolism groups include the teams of Justo F. Castaño (pituitary and metabolic neuroendocrinology), Mar Malagón (cellular and molecular endocrinology of the adipose tissue) and the clinical team headed by Francisco Perez-Jimenez and Jose López-Miranda at the Córdoba University Hospital (nutrigenomics and lipid metabolism). These groups, including ours, fall under an umbrella of institutions (University of Córdoba, IMIBIC and CIBERObn).

Facing pessimistic news about the funding of Spanish science, we trust that the scientific track record, institutional support and international connections of Córdoban endocrinologists will secure the continuation of our activities in the near future, thus pushing forward biomedical, specifically endocrine, research in Córdoba and making our brains heavier and more influential than our ancient stones.

Manuel Tena-Sempere
Professor of Physiology, Faculty of Medicine, University of Córdoba

Córdoba, located in the most Southern region of Spain -Andalucia-, has a rich cultural heritage and an ancient historical tradition.

The Slovak Endocrine Society

The Slovak Endocrine Society (SES) was founded in 1937 as part of the Czechoslovak Endocrine Society, following the division of Czechoslovakia into the Czech and Slovak Republics. The SES started to work as an independent organization. Nowadays the SES, which is an affiliated member of the European Society of Endocrinology (ESE), has more than 100 members, of whom are simultaneously members of ESE.

Despite the separation of Czechoslovakia, both the Slovak and Czech Endocrine Societies continued in the tradition of joint endocrine meetings, alternating every year between the Czech and Slovak Republics. When the meeting takes place in the Czech Republic, the SES organizes Slovak endocrine workshops on a specific topic. As a nonprofit organization, the SES promotes research and training in endocrinology, supporting basic and clinical research by providing scientific grants and prizes to researchers, including travel grants to allow young endocrinologists to attend the European Congress of Endocrinology.

Professor Ivica Lazúrová, MD, PhD
President of the Slovak Endocrine Society
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Differentiation of nestin-positive cells

Major questions remain with respect to beta cell neogenesis, and the mechanisms by which b-cell mass is maintained in adulthood. This study reports an effective multipotent protocol to induce beta cell differentiation from multipotent nestin-positive bone marrow stem cells. The differentiated cells not only expressed insulin and glucose transporter 2, but also displayed glucose-responsive secretion of insulin. These results delineate a new model system to study islet neogenesis and possible pharmaceutical targets. Nestin-positive bone marrow stem cells may be therapeutically relevant for beta cell replacement in type 1 diabetes.


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Recent Advances in Adrenal Disease

In pheochromocytoma the famous “10% rule” that 10% of tumors are hereditary has been abandoned and a growing number of familial cases are observed.

The latest is maX, the myc associated paraganglioma susceptibility gene. This now brings up the number of phaeochromocytoma or paraganglioma mutations to 10: RET, VHL, SDHA, SDHB, SDHC, SDHD, SDHA29, NF1, TMEM127, and MAX. Thus, 30–40% of pheochromocytomas or paragangliomas have germline mutations. A challenge in pheochromocytoma/paraganglioma is the diagnosis of malignancy prior to metastases. Using modern catecholamine metabolomic profiles Eisenhofer et al. (European Journal of Endocrinology, 2011) demonstrated that plasma methoxytyramine holds promise as a cancer biomarker. The 2011 European Society of Endocrinology (ESE) guidelines (Eisenhofer et al., European Journal of Endocrinology, 2011, Kroiss et al., Clinical Cancer Research, 2012) now recommend this promising metabolite for routine screening.

MaX is the diagnosis of malignancy in cases of bilateral paraganglioma. This now brings up the number of familial cases are observed. The latest is maX, the myc associated paraganglioma susceptibility gene. This now brings up the number of phaeochromocytoma or paraganglioma mutations to 10: RET, VHL, SDHA, SDHB, SDHC, SDHD, SDHA29, NF1, TMEM127, and MAX. Thus, 30–40% of pheochromocytomas or paragangliomas have germline mutations. A challenge in pheochromocytoma/paraganglioma is the diagnosis of malignancy prior to metastases. Using modern catecholamine metabolomic profiles Eisenhofer et al. (European Journal of Endocrinology, 2011) demonstrated that plasma methoxytyramine holds promise as a cancer biomarker. The 2011 European Society of Endocrinology (ESE) guidelines (Eisenhofer et al., European Journal of Endocrinology, 2011, Kroiss et al., Clinical Cancer Research, 2012) now recommend this promising metabolite for routine screening.

Studies have shown that plasma methoxytyramine is a biomarker for the diagnosis and monitoring of pheochromocytoma. This metabolite is produced by the enzymatic decarboxylation of tyramine, a precursor of norepinephrine. Elevated levels of methoxytyramine have been associated with an increased risk of pheochromocytoma, and its measurement can help in the differential diagnosis between unilateral and bilateral adrenal hyperplasia. However, the diagnostic utility of methoxytyramine is limited by the need for specialized testing and the potential for false positives. Further research is needed to validate its role as a biomarker.

In conclusion, the recent advances in adrenal disease have expanded our understanding of the genetic and molecular basis of these disorders. This has led to improved diagnostic tools and targeted therapies, which will likely continue to evolve as our knowledge grows.

A Day in the life of...

A Dublin Professor of Endocrinology

06.30

Physiotherapy, following shoulder surgery. My physio described this as “voluntarily hurting yourself 270 times a day for the next three months”.

08.00

Start morning tutorial. The junior doctors dread these interactive sessions but express gratitude afterwards. Like physiotherapy, tutorials are painful, but ultimately beneficial.

09.00

Diabetes clinic. Large queues dictate that we work fast; I hope the medical students absorb enough to keep them conscious. Between patients I field phone calls from those family doctors can’t carry on enough to say I am sitting duck. One of them simply wants tickets for Dublin’s next hurling match and through gritted teeth I concede that I’ll do my best.

11.30

Clinic draws to an exhausted conclusion. Outside a crowd jostles for attention, my secretary prevails. I adjudicate on clinic referrals—two strikes and they are discharged (along with the match tickets). A new neurological referral is prolactin defectors – two strikes and they are discharged (along with the match tickets). A new neurological referral is prolactin defectors—two strikes and they are discharged (along with the match tickets). A new neurological referral is prolactin defectors—two strikes and they are discharged (along with the match tickets). A new neurological referral is prolactin defectors—two strikes and they are discharged (along with the match tickets).

13.55

Review patient with symptomatic paraganglioma mutation. He is 50 years old with a ten-year history of paraneoplastic symptoms, including hypertension, headaches, and cognitive decline. Despite surgical resection, the tumor recurs with metastases to the lungs. The patient is started on a combination of chemotherapy and targeted therapy with encouraging results.

14.00

The pituitary clinic. My second patient looks awful; an auld lad from the suburbs, likely suffering from Cushing’s syndrome. The patient has a history of chronic kidney disease, hypertension, and diabetes, and has recently been admitted for hyperpigmentation and weight gain. Initial investigations reveal elevated cortisol levels, consistent with ACTH-secreting pituitary adenoma. We discuss the options for treatment, including surgery, radiation, and medical therapy.

17.00

I head up to review the septicaemic patient – the SHG has stayed well beyond the time that the lunatics in Brussels dictate that he should, and has done a fine job. He looks well in the dark recesses of my brain marked “potential registries”.

20.30

I decline post training hot stew and head home. My youngest lad is just back from training with our club U13 team. I inspect his glucometer reading as a prelude to the decision to opt for novorapid or lucozade sports. Next to him is a hero who is infusing Factor V111, haemophilia has not prevented him from playing the fastest and most violent ball sport on the planet. Training is brisk, efficient and exhausting and I only have one significant injury – a dislocated pinkie which I put back into place and buddy-strap, pitchside. The stovetop grunts thanks and rejoins the fray. These guys are tough.

A Day in the life of...
Recent Advances in Adrenal Disease

In pheochromocytoma the famous “10% rule” that 10% of tumors are hereditary has been abandoned and a growing number of familial cases are observed. The latest is MAX, the MYC associated factor X gene (Corinno-Miédec et al., Nature Genetics 2011). In 1694 patients with pheochromocytoma or paraganglioma mutations in the MAX gene were found in 1.12% (Burnichon et al., Clinical Cancer Research, 2012). This now brings up the number of pheochromocytoma or paragangliomas that have germline mutations. A challenge in pheochromocytoma/paraganglioma is the diagnosis of malignancy prior to metastases. Using modern catecholamine metabolomic profiles Eisenhofer et al. (European Journal of Endocrinology 2011) demonstrated that plasma methoxytyramine holds promise as a cancer biomarker for metastatic paragangliomas.

“Is it predicted that modern sequencing will soon identify the genetic cause of bilateral hyperplasia?”

In adenocortical cancer (ACC) Afft et al. (JCEM, 2011) have demonstrated the power of stromaldeblumine hold promise as a biomarker for metastatic paragangliomas. This new brings up the number of pheochromocytoma/paragangliomas that have germline mutations. A challenge in pheochromocytoma/paraganglioma is the diagnosis of malignancy prior to metastases. Using modern catecholamine metabolomic profiles Eisenhofer et al. (European Journal of Endocrinology 2011) demonstrated that plasma methoxytyramine holds promise as a cancer biomarker for metastatic paragangliomas.
**Endo Crossword**

**Across**

4. Nobel prizewinner "for the development of radioimmunoassays of peptide hormones", second name (5)
6. Male congenital birth defect (14)
8. Major risk factor for osteoporosis (3)
9. _______'s syndrome, post-partum necrosis of anterior pituitary (7)
12. The ‘cuddle’ hormone (8)
15. Element of the thyroid (6)
16. Cryptic clue: part of escort is older, shows stress (8)
17. Cryptic clue: debate is raging to find cause of ulcer (8)
18. Trained iguanas (anagram): ESE ExCo member, second name (8)

**Down**

1. Described gonadal dysgenesis, second name (7)
2. See 18 across, first name (6)
3. A plebary speaker who can make you blush (3)
4. See 4 across, first name (7)
5. Erotic gain (anagram): disease that’s your fault! (10)
6. See 1 down, first name (4)
13. _______'s oil, possible preventative treatment for adrenoleukodystrophy (7)
14. Virilising hormone (8)

**Endo Lingo**

**HASHIMOTO’S DISEASE**

“Hashimoto’s disease is an autoimmune disease which causes inflammation of the thyroid gland and results in a reduction in thyroid hormone levels.” Also known as chronic thyroiditis. The symptoms of Hashimoto’s disease vary, but usually include a swollen thyroid gland (goitre) and hypothyroidism. Hashimoto’s disease causing hypothyroidism is found in just above 2% of the population.

Credit: www.yourhormones.info

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**Did you know?**

According to a controversial 2004 study, in the Olympics of 2156 women will beat men in the 100-meter run.*

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* Tatem and colleagues extrapolated winning 100-metre times since 1900 to forecast how race times would change in the future. Tatem et al. (2004) Nature 30: 431(7608): S25. doi: 10.1038/431525a