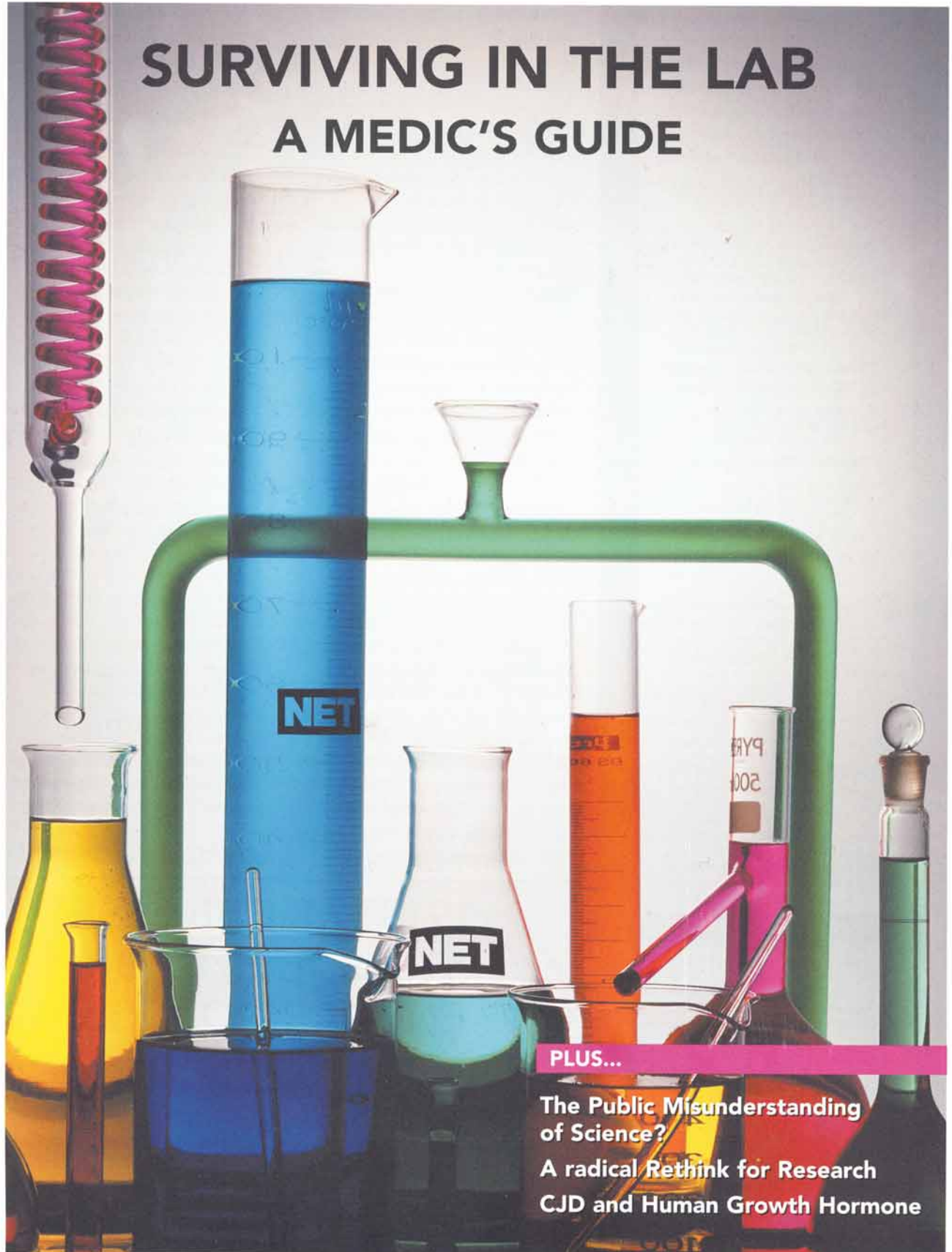


THE **Endocrinologist**

SURVIVING IN THE LAB A MEDIC'S GUIDE



PLUS...

**The Public Misunderstanding
of Science?**

**A radical Rethink for Research
CJD and Human Growth Hormone**



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Deadline for news items for
 the next issue: **29 March 2000.**
 Please send contributions to the above address.

Welcome to the first issue of the new year. We hope you all enjoyed the celebrations for the millennium, and promise that you won't hear the 'M' word again - well, at least not from us!

Science and medicine have been debated frequently in the media in recent months, perhaps more so than at any other time. The arguments over GM foods have rumbled on, and a variety of topics, including the use of expensive or controversial drugs (such as Relenza for influenza and cannabis for pain relief) have been discussed. But do the media convey a clear and accurate message to the general public, or do they fudge the facts in search of a scoop? In the first of a series of discussions, two of the Society's elder statesmen wrangle with this point on page 8. (We're sure you'll recognise these characters from the bar at the last conference you attended...) Their deliberations were recorded by another eminent endocrinologist who wishes to remain nameless to preserve impartiality. Please feel free to write to us and let us know your views, anonymously or not!

One of the spin-offs of greater public awareness of science and medicine is that the Society now deals more and more with members of the public and other interested bodies, who contact the office directly or access our Web site. Tom Parkhill, External Relations Officer for the Society, provides us with an insight on page 7. As you can tell from his article, a broad range of questions is received in the office, and you may find yourself called upon to help provide suitable answers. The Society deals with the media directly, and endocrinologists have been well represented recently in a series of healthcare programmes on the BBC. Enabling expert opinion to be

made more widely available is an expanding role for the Society, and one which will continue to develop.

On page 9, Andrew Baird addresses the sharply contrasting approaches to research in academia and the private sector. His summing up suggests that it might be time for a rethink when it comes to identifying the best approach to conquering disease. Meanwhile, on page 6, Anna Crown gives some well-considered advice to medics who are contemplating trying their hands at research.

Faced with all the technological advances of the last few years, and the prospect of rapid and exciting developments to come, it is sometimes easy to forget the enormous impact that endocrinologists have made, with the discovery of what now seem like straightforward hormone therapies. To remind us of this, a short 'personal account' on page 11 illustrates the devastating effects which primary hypothyroidism brings to the patient. As you read this at the start of the 21st century, remember that until about 100 years ago this common, treatable condition was an incurable disease.

There is much to look forward to in the coming year. We have been closely involved in planning two forthcoming events for the Society this year: the BES 2000 conference in Birmingham in March, and the first Endocrine Summer School in Bristol in July. Both offer interesting programmes and excellent opportunities to meet colleagues. But if you are tempted to pontificate in the bar, beware! Our roving anonymous reporter will be there...

DIANA WOOD
 ANN LOGAN

191ST MEETING OF THE SOCIETY FOR ENDOCRINOLOGY

Royal College of Physicians, London
 20-21 November 2000

Plenary lectures, symposia including an Endocrine-Related Cancer symposium, Nurses session, Young Endocrinologists session, debate, oral communications and posters

Conference grants are available to UK young endocrinologists and overseas members

Further information available from the Bristol office

Abstract deadline: 4 August 2000

Email News Service

Plans are under way to launch a new service, offering advance journal contents, and more general Society and conference information, by email. Details will appear on the Web site as soon as they are available.

If you have any thoughts about the information you would like to receive, or would like to help with testing, I would be pleased to hear from you.

JONATHAN SEAGRAVE, IT OFFICER (EMAIL: JON.SEAGRAVE@ENDOCRINOLOGY.ORG)

Travel Fellowships

Five travel fellowships of £100 are available for Society for Endocrinology members to attend the **Bone and Tooth Society** meeting in Cambridge on 10-12 July 2000 (see advert on page 7). Applicants should be under the age of 25 or still in full-time training. Application details can be found at www.batsoc.org.uk. The deadline for receipt of applications is **22 May**.

Young Endocrinologists Clinical Review Lecture

Following the invitation for applications in the autumn newsletter, we are pleased to announce that the winning abstract was submitted by **Dr John Newell-Price** from St Bartholomew's Hospital. He will present his lecture at the Clinical Cases Meeting on Monday 21 February at the Royal Society of Medicine in London.

Young Endocrinologists

The Young Endocrinologists Committee wishes to democratically recruit replacements for 3 members who are due to retire in July 2000. All Society members are invited to make nominations. Existing members are eligible to re-apply.

A nomination form can be found on the Society's Web site. Click on About the Society, then follow the path via Committees to the Young Endocrinologists and to the nomination form. Forms are also available from Julie Cragg or Ann Lloyd in the Bristol office. Nominations should be submitted to Julie by **Friday 19 May**.

Grants of up to £150 are offered to Young Endocrinologists to attend **Summer School**, 10-14 July 2000 in Bristol. Contact Christine at the Bristol office or see our Web site.

New Committee Chairmen

Following ratification by Council, **Professor Ian Henderson** is the Chairman of the newly formed Science Committee, which will meet for the first time soon. **Professor Howard Jacobs** has become Chairman of the Public Relations Committee.

Congratulations to...

...**Barry Furr** who has been awarded an OBE for services to cancer drug discovery.

...**David Baird** who has received a CBE for services to obstetrics and gynaecology.

...**David Phillips** who has been awarded a Chair at the University of Southampton in the new Department of Endocrinology and Diabetes.

...**Frank Talamantes**, newly appointed US Receiving Editor for *Journal of Endocrinology*, who is to receive awards from The Endocrine Society and the Endocrinology and Metabolism Section of the American Physiological Society.

NB The Society for Endocrinology got there first, awarding Frank the Transatlantic Medal in 1991.

Members on the move...

Parween Bano to Apollo Hospital, Irba Ranchi, India; **T A Chowdhury** to Central Middlesex Hospital, London; **Karin Eidne** to Keogh Institute for Medical Research, Sir Charles Gardner Hospital, Perth, Australia; **D Morris** to St Bartholomew's Hospital, London; **Mark W Savage** to the Royal Hallamshire Hospital, Sheffield; **R Windle** to University of Nottingham.

Endocrine Nurses

Committee: Emma Stobie and Pauline Musson were nominated and have since been elected as members of the Committee. They specialise in adult and paediatric nursing respectively. In addition, Diane Barstow and Alison Gaunt have been co-opted onto the Committee, so increasing the representation of paediatric nurses. Professor Julian Davis has retired as the Society's representative, and we thank him for his endeavours on our behalf. He is replaced by Professor Ashley Grossman. We extend a very warm welcome to our new Committee members.

BES 2000: The Nurses Session, 'The challenges, dilemmas and psychological impact of neuroendocrine tumours', will take place on Wednesday 15 March between 10.00 and 12.00, as part of the BES meeting in Birmingham. It will be followed by a welcome lunch giving us the chance to meet, mingle and chat. We look forward to seeing you there.

Training Course 2000: This will be held on 4-6 September, and will focus on reproduction. We are returning to St Anne's College in Oxford, since it proved a popular and accessible venue 2 years ago. (Next year we hope to chose a northern location!) Please contact Ann Lloyd at the Bristol office for further details and an application form.

Regional representation: Tim Drowley is still seeking nurses to act as local representatives in some parts of the country. Representatives give feedback to the Committee regarding nurses' needs and concerns. Please contact Tim through the Society.

MAGGIE CARSON

SOCIETY CALENDAR

13-16 March 2000

19th Joint Meeting of the BES
International Convention Centre,
Birmingham

10-14 July 2000

Summer School
Bristol Marriott Hotel, Bristol

4-6 September 2000

Nurses Training Course 2000
St Anne's College, Oxford

20-21 November 2000

**191st Meeting of the
Society for Endocrinology**
Royal College of Physicians, London

Awash with Colour

In 1986 I was diagnosed as having a pituitary tumour, which was removed at the Walton Hospital (Neurosciences), here in Liverpool. Several years later I was given a set of pastels for Christmas and rediscovered my interest in art. Since leaving school, I had not produced any art at all, but now found drawing very relaxing, and a way of forgetting hospitals, check-ups and medication.

People began asking me for portraits, and I thought seriously about returning to college to complete my art education. In 1991, I nervously enrolled for 2 years as a mature student on a local art course - I was 35 in a class full of 16- to 18-year-olds. To my delight I gained a distinction in Art & Design, and completed Foundation Art. I immensely enjoyed those 2 years, and have not stopped painting since.

I have taken part in local exhibitions, gain regular commissions, and each year I paint for 'Children in Need' - raising funds by exhibiting and selling my work. My latest 'venture' is to lead my Support Group in Liverpool to illustrate and create artwork for the building of our new Walton Centre. This begins soon, and I can't wait to start!

I have found valuable therapy within my art, it has restored much lost confidence, and given back a little to those who helped me early on. Some of my work is donated to the local hospitals who treated me.

PAT McBRIDE, TEL: 0151 625 2976
AREA CO-ORDINATOR, LIVERPOOL SUPPORT GROUP
THE PITUITARY FOUNDATION

Grant News

The **British Medical Association** are offering various research awards and fellowships in 2000. Full details and application forms are available at <http://ovid.bma.org.uk> or by fax from 020-73836399. The closing date for applications is **17 March 2000**.

The **Samuel Leonard Simpson Fellowships in Endocrinology** enable endocrinologists to travel either to or from the UK. Up to £20 000 is available. The closing date for applications is **1 July 2000**.

Email: conferences@rcplondon.ac.uk;
Fax: 020-74875218.



Diabetes Insipidus (donated to the Pituitary Foundation office)

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Metabolism (with Serono)

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Thyroid Function in Pregnancy and Intellectual Development

It is well known that severe iodine deficiency in pregnancy may lead to neuropsychological impairment in the child.

Recently, a carefully controlled study by Haddow *et al.* (*New England Journal of Medicine* **341** 549-555) showed a significant decrement in IQ in children aged 7-9 born to mothers who were known to have untreated hypothyroidism during pregnancy, and who came from an iodine-sufficient area. Notably, nearly 20% of these children had an IQ of less than 85, compared with 5% of carefully matched control children. This study has raised many questions and underlined the need to consider carefully the possibility of screening for thyroid function in early pregnancy. More research is certainly needed. It should be remembered that up to 2.5% of pregnant women may have elevated TSH. This study is not the first to suggest neurointellectual impairment in the offspring of women with thyroid abnormalities.

MALCOLM PRENTICE
BRITISH THYROID ASSOCIATION

Biosciences Federation

The biosciences in the UK tend to be quite fragmented, with no single body providing representation in the way that the Royal Society for Chemistry does for chemistry, or the Institute of Physics does for the physical sciences.

Because of this, the UK Life Sciences Committee (UKLSC), the UK National Committee for Microbiology and the Institute of Biology have set up a steering committee to look at a proposal to create a single Biosciences Federation. The Society for Endocrinology, as a UKLSC member, has been invited to contribute by the middle of March.

More information is available at: www.lifesci.org and www.iob.org. Please send any comments to Tom Parkhill at the Bristol office.

Web spinning

Highlighting the best on the Web

Medscape

www.medscape.com

Building a successful site requires many things, and Medscape has several of them: good content and organisation, a catchy title that is easy to remember, and 'hooks' to bring users in. In addition to news, speciality spotlights, treatment updates, clinical management, conference summaries and schedules, patient resources and multi-disciplinary links, there are sections on humour, an interactive diagnosis page, quizzes, puzzles and numerous other features. To see everything, readers must register, but access is free. A great medical site.

SERVICES: L, D, N, S, O (numerous ways to interact);

STRONG POINTS: Thorough coverage of medicine;

WEAK POINTS: None;

RATING: Excellent

Breast Cancer and Environmental Risk Factors in New York State

www.cfe.cornell.edu/bcerf

The organisers of this superb site on breast cancer clearly understand the rules of Web communication. The topic is of broad interest, and the information is organised to present as broad and coherent a picture as possible. Led by a search engine and separate links to individual categories, such as fact sheets, environmental factors, genetic factors, statistics, newsletters, meeting information and external links, this site provides both the research community and the general public with a wealth of important information.

SERVICES: D, N, L, S, O (newsletter);

STRONG POINTS: Excellent coverage of topic;

WEAK POINTS: None;

RATING: Excellent

Metalloprotein Database and Browser

metallo.scripps.edu/

After visiting and playing around with this site, I had a great appreciation of what Java can do with information online. The database contains up to date and useful information about metalloproteins and their activities (including metalloproteinases). Most impressively, searching for proteins, using user-defined criteria, yields 3D representations of the protein regions containing the metal. Users can rotate this, zoom in on it and even measure molecular distances. The interface leaves a little to be desired, but workers in the field may not have problems. I was quite impressed by what I saw.

SERVICES: D, L;

STRONG POINTS: 3D representations;

WEAK POINTS: Interface;

RATING: Very good

Don't forget to visit the Society for Endocrinology on the Web: www.endocrinology.org; tell us about your favourite Web site: a.logan@bham.ac.uk.

KEY

Services provided at Web sites:

T Tools - Analytical computing tools

D Data - Searchable or downloadable database information

G Goods - FTP delivery of useful items (e.g. full package, bug fix or demo software)

L Links - Useful links to other sites

N News - News of interest

S Support - Feedback in response to users' enquiries

O Others - e.g. Innovative use of Web tools, appearance, editorial point of view

Ratings: Excellent, Very Good, Good
Nothing below good will be reported here.

Thanks to Kevin Ahern and Genetic Engineering News.

Science and Technology Media Fellowships 2000

These give scientists summer placements with newspapers, magazines, TV and radio. Application deadline: **31 March 2000**. Contact: The British Association, Tel: 020 7973 3069; Email: meenal.gupta@britassoc.org.uk; Web: www.britassoc.org.uk.

Out of the Clinic and into the Lab: A Strategy for Survival

This article is based on Anna Crown's very well-received talk entitled 'PhDs/MDs and how to survive them', given during the 190th Meeting of the Society, last November, as part of the Young Endocrinologists Symposium.

My aim is to help medics embarking on laboratory-based research. My own experience, and my observations of medics in the lab, form the basis of this article. Perhaps the most important advice is that you should only undertake research if you want to; to do it because you think you should is a recipe for misery and disaster.

The laboratory has a pyramidal hierarchy, from professors at the top, through senior lecturers and lecturers, to post-docs (who have completed their PhD theses, and are the equivalent of SHOs or SpRs), to PhD and BSc students. Technicians are also an integral part of the lab, and by no means necessarily at the bottom of the pyramid. Unlike the 3- to 6-month jobs of many junior doctors, the contracts of lab staff are usually 1-3 or more years long. Sensitivity to the interpersonal dynamics of the lab you join is vital. Unfortunately, on your first day, you cannot necessarily expect people to regard you neutrally. They may have had bad experiences of previous medics in the lab. You are probably being paid more than a scientist of equivalent seniority, as you embark on work for which you will be seen as almost totally untrained.

It is vital that you appreciate quickly how much you have to learn. If your most recent lab experience is A-level chemistry, effectively you know nothing. You will have to be taught how to weigh chemicals, how to use a pipette, how to make up solutions and so on. If you are too arrogant to learn these basics properly your experiments are bound to fail. Don't assume that you can extrapolate from your medical or surgical experience of sterile technique to a cell culture hood without explicit instruction. There is plenty of scope here to ruin both your own experiments and those of others. It is hard to recover from that sort of unpopularity. Be humble, and get someone friendly to show you how it

all works! In the early stages, it is also good to ask somebody to check your experimental designs, to be sure you have included appropriate controls and to avoid unnecessary frustrations. Although you are used to working independently, your lab work will need fairly close supervision to start with. Remember that no-one is there to set up or finish off your experiments. This includes routine work like looking after your cells in culture, and menial tasks like washing up. It is simply unacceptable to be 'bleeped away' half way through something. Later, when you are competent to reciprocate, there may be scope for some give and take. Do not become the flat-mate from hell, leaving the sink full of washing up, finishing off chemicals, or leaving radioactive waste lying around for someone else to dispose of! I have also observed that gory 'Doctors' Mess' talk does not usually go down well in laboratories; scientists, sensibly, do not see the funny side of patients being found dead on the toilet.

My last 'negative' point: remember that there is often a period of despondency shortly after you start your research. You move from a busy schedule to an apparently empty one. It takes time to get going, and even

longer to get results. Scientific research lacks the immediacy of clinical medicine. You don't get the instant gratification of making someone better. Conversely, if a technique is not working, it won't go to ITU or die, so you just have to tussle with it.

Moving on to the positive side of the transition. Get fully involved in the lab - enjoy it! Go to lab meetings and journal clubs, and don't chicken out of presenting genuinely 'scientific' papers, including the 'Methods' sections! Abandon the Doctors' Mess and go to the lab tearoom instead. Here you can get to know people. Labs can be really friendly; you may even get a birthday cake and a card if you're lucky - something I have never known to happen on the wards! If things are slow to get going, turn this to your advantage. Use your spare time to get acquainted with the relevant literature. Improve your IT skills. Do a statistics course. Most grants allow for one clinical session a week. If you do not have to provide a service commitment, you can take advantage of your uncluttered timetable to attend speciality clinics that interest you. I would, however, suggest that other than this one session, and the occasional acute medical take, you should abandon clinical work completely if possible whilst doing your thesis.

There are many other ways to enhance your research experience. It is useful to make contacts both locally and elsewhere. Find out who is doing similar or related work, seek advice, and set up collaborations. Get involved in 'off-shoot' projects which may well be productive in unforeseen ways. Attend meetings, submit abstracts, present posters and give talks.

Remember that as a clinician there are small ways in which you can be helpful in the lab! Biomedical scientists like to set things in clinical



contexts, so you may be called on for thumbnail sketches of diseases.

Perhaps you can see potential clinical applications of work that have not previously been considered. You may be used to provide a phlebotomy service or to gain access to other human material. Your personal clinical advice may even be sought, or you may be needed for first aid. You are bound to be taking a lot from your lab; it makes sense to take up any opportunities to reciprocate.

The return journey to the wards can also be difficult. Facts that used to be at your fingertips seem to be lurking somewhere in your mid-brain. Friendly, familiar faces who you relied on for favours may have moved on. The challenge is increased if you are trying to combine research with continued clinical training, under the new Calman regimen. My only definite recommendation is that you try to finish writing your thesis before you return to the wards. It is much more difficult to squeeze it in afterwards.

Finally, I would suggest that you will optimise your research training if you have both a scientific and a clinical mentor. As I was told early on in my research, it is all too easy as a clinician scientist to impress scientists with your clinical acumen and clinical colleagues with your scientific genius, whereas one's aim should be to be respected by scientists as a scientist and by clinicians as a clinician.

ANNA CROWN
BRISTOL ROYAL INFIRMARY

Administrative aspects of the transition from clinic to lab are covered more fully in the Royal College of Physicians booklet 'Guidelines for Clinicians entering Research'. You should approach the relevant College or training body at an early stage to discuss recognition for any clinical training you undertake whilst doing your research. One year of your time in research may count towards the total period required for Specialist Registrar training programmes. For all sorts of reasons (from indemnity cover to maternity leave rights) you should also try to obtain an Honorary Specialist Registrar contract with the NHS whilst you are doing your research.

The Public Face of Hormones...

As a charity, the Society for Endocrinology tries to remain outward facing. As this part of our work becomes more important, the outside world also becomes more aware of us. More and more members of the public are now keying 'hormone' into their favourite search engine, and coming up with our Web address. Increasing numbers of people contact groups like the BMA, asking for information on endocrinology, and are passed on to us. This means that we get enquiries on a whole range of subjects including clinical problems, job applications, educational aspects, students wanting us to answer their project questions, kids asking what endocrinology means, and so on.

While we've always had enquiries from the public, they now come from further afield, and from different groups of people. Many email enquiries are from abroad (mainly in the USA) asking for a local endocrinologist. They may not realise that we are based on another continent. We get one or two enquiries every day, and the numbers are increasing. Half are by phone (mostly UK-based), but we also get emails, faxes, and even one person knocking on the office door asking for information. How do we deal with these?

Most enquiries do involve offering (not recommending) the contact details of other parties. Many enquirers simply want to be put in touch with a clinical endocrinologist. The first point

we have to make is that we in the office are not clinicians; we certainly can't offer a diagnosis, but we can't even recommend a course of action, no matter how innocent it might seem. Any course of action must be the choice of the patient.

For example, we can't say that they should go and see a particular clinician (we try not to give out members' names). We will try to tell them the locations of their nearest endocrinology departments, and that if they want, they can contact them (although we stress that a GP referral is usually necessary). However, patients often really want names to contact, so we are now looking at ways of providing the contact details of local clinicians.

Very occasionally, phone enquiries are from people who are distressed or who are complaining about treatment. Here we have to try to tread as delicately as possible. Of course, we are only hearing one side of the story, but we still have to treat these callers with sympathy. We may be their last resort, and they may have genuine problems or grievances. Often there's nothing we can do, but sometimes just listening helps. Patient calls get absolute priority over everything else. In practical terms, we can only suggest a patient group, or a clinician, so it can feel as though you've just passed them to another link in a chain. But just now and then, someone will send you a message saying 'thanks', and that's enough.

TOM PARKHILL



Bone and Tooth Society 50th ANNIVERSARY MEETING

10-12 JULY 2000

CHURCHILL COLLEGE, CAMBRIDGE

Speakers to include:

Erik Eriksen (Aarhus) Jack Martin (Melbourne)
Barbara Mawer (Manchester) Greg Mundy (San Antonio)
Michael Parfitt (Little Rock)

ABSTRACT DEADLINE: 1 MARCH 2000

Further details from:

Janet Crompton, Conference Organiser
Tel +44 (0)1453 549929 Fax +44 (0)1453 548919
Email janetcrompton@compuserve.com

*There are five Society for Endocrinology travel fellowships to enable members to attend this meeting. See www.batsoc.org.uk for details.
Deadline for applications 22 May*

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Email janetcrompton@compuserve.com

*There are five Society for Endocrinology travel fellowships to enable members to attend this meeting. See www.batsoc.org.uk for details.
Deadline for applications 22 May*

A Great Misunderstanding?

One of our fearless correspondents recently eavesdropped on two well known characters from the endocrine world, Professor Sir Humphrey Lyggande and Dr Rhys Eppter. You've probably seen them in the conference bar, late in the evening, briefly digesting a plenary lecture, before settling down to some competitive interaction. On this occasion, our heroes were tangling, between sips of local brew, over whether the public understanding of science really has advanced at the start of the 21st century.

HL: ...so I must say, I think the public are getting pretty well-informed about science. The Research Councils are driving at Public Understanding of Science, and there's so much more awareness in the media. I'm glad to see the message getting across.

RE: You don't really think that, do you? The public is more confused than understanding. Just look at one of the latest panics in the press: what about GM food? A large section of the public buys their organic tomatoes believing that they contain none of that nasty DNA! They've swallowed a lot of half-digested nonsense, believing that they've been informed, when really they've just been entertained with slogans. Our media seems to focus mainly on controversies, without bothering too much about portraying facts.

HL: But that's not so bad is it? Demonstrating that there is a controversy will whip up interest, and ensure that things are publicly discussed, as they should be.

RE: Don't believe it - the media will regularly enjoy a short-lived sensation, but they always pander to entertainment, rather than providing serious information, or giving the context and background so that people can genuinely decide for themselves,

instead of being herded sheep-like by the latest scare.

HL: Isn't this a bit old-fashioned, coming from you? Come back Lord Reith, we need you, bring back the earnest didactic bow-tied oracles to educate our ovine public!

RE: No, no, we don't need old-fashioned ex-cathedra received wisdom, but we do need some real information with some genuinely balanced scientific scepticism. The tosh we get on the radio news in the morning is a case study for you. Anything for a bit of polarisation of opposite views, peppered with the occasional bit of scientific breakthrough with an out-of-context expert, balmed by a spot of religious musing and the comic-strip sporting news...

HL: Oh come now, this is a paper tiger isn't it? What a cynic you are tonight! Read your newspaper tomorrow, and find your science correspondent's section: high quality journalism, with careful research, written by people with real scientific training who are as anxious as you are to portray a balance of serious information.

RE: There's some good work out there, but it's not easy to find. The science is tucked away inside the

broadsheets, not up on the front pages. There's a mood of anti-science about, and people don't see that scientists are trying to apply common sense and serious analysis to important problems. The fashionable illusion of scientists as no more than a new priesthood with its own esoteric world, apart from real life, has had a very damaging effect. But to stick to the media, TV and radio are a model of condescension - 'don't worry gentle viewers, we'll keep it simple for you, and not trouble you with real information'. People are more intelligent than that, they need to be treated as such.

HL: Perhaps you have a point. Anyway, what should we do about it?

RE: That's more difficult, but at least we should recognise the problem. I think we have a duty to encourage more young scientists towards mainstream journalism. There's a feeling around that the only respectable career for a scientist is to write papers and lead a research team, that leaving pure science is only for failures. We should send bright articulate scientists into the media, to become the new generation of front-line news editors, not just leave it to the arts and politics graduates.

HL: You may have something there, but it would take quite a culture change. The Public Understanding of Science initiative has started though - your grant applications need to show that researchers have taken the problem seriously. I think things might change in the next few years. Perhaps the humanities will begin to feel embattled in their turn, and then the challenge will be for our brave scientists to broaden their horizons. We need our graduates to be polymaths too...

RE: Ah yes, you're right there, but that's for another evening. Can I tempt to you one last drink before bed?



Is it as bad as Dr E thinks? How well informed are the public about science, or even endocrinology? Should scientists risk dabbling in the murky waters of journalism? Have the popularisers betrayed their noble calling to pander to public whim? Send us your comments and ripostes, for publication in the next issue, and for the edification of Sir Humphrey and Dr E.

Medical Research in the New Millennium: Enlightened Thinking from the Dark Side

Until July 1995, I was an academic. I held peer-reviewed grants, sat on grant review committees, taught students, trained post-docs, published papers and went to scientific meetings. Today, I still do research, but in a company. We have peer-reviewed grants, sit on grant review committees, teach students, train post-docs, publish papers and go to scientific meetings. Sounds like the same job, and, largely, it is. But there are a number of very significant differences.

First, there is the issue of conflict, or, more specifically, perceived conflict. As 'company' scientists, there isn't any because everyone knows where we stand. We work for a company that wants to make a profit and its mission is clear. It will use our discoveries to accelerate commercialisation. When we give presentations, review a grant, manuscript or any proposal, publish our work, or collaborate with outside scientists, everyone knows our commitments. It is all above the table. Everyone deals with conflict of interest and, in the private sector, it is (more) upfront.

Sometimes I think the opposite is true in academia. Ask yourself whether the academic scientist reviewing your grant is a consultant for a company? Or has founded or plans to found a company? Or sits on a Scientific Advisory Board? In fact, they may have significant ownership of a company that funds research close to the topic being reviewed. And maybe the work proposed in your grant application questions the very existence of that company. Who knows? Conflict is a complex issue and 'Chinese Walls' can certainly work out. Lawyers do it all the time. But what about when an academic scientist publishes the use of a reagent that they are simultaneously marketing through a company that they have started? Who keeps track of their conflict?

The issues of conflict are pervasive, complex and difficult to contain. However, they can be readily resolved; the first step is open discussion. Perhaps scientific journals should

include two new sections in Materials and Methods: how the research was funded and potential issues of conflict. After all, disclosure is the first step towards conflict management and we must be pragmatic in recognising its existence.

There is a second, even more significant difference between research in the private and public sectors: teamwork. In one it is rewarded, in the other it is discouraged.

We have all read grant reviews that raise the question of 'investigator's independence'. The solution? Don't work too closely with others because you risk losing your identity and, with it, your funding. Never mind that excellence requires expertise too diverse for any one scientist to master. Funding agencies unknowingly promote reduced competence across many fields in place of collaboration with existing experts. The goal? Limited, if not sole, authorship. Unfortunately, the mark of success in academia has become personal credit for discovery rather than obtaining the 'answer'. It is supported by the weight that institutions give to things like 'impact factors' in assessing career development. It is exacerbated by the personalisation of scientific achievement. Can any single investigator really believe that they, alone, merit the ultimate measure of personal glory in medical research, the Nobel Prize?

In a company, the opposite is true. Individuality is lost, the goal is to get the 'answer'. No single person can claim credit (although everyone does). Instead, research efforts are multidisciplinary and research groups are highly specialised. Expertise is 'brought in' to get the job done. You are never rewarded for single-handed success and never penalised for being a team person. It's the opposite. The reward goes to the team because they get the job done faster (and usually better). In the end, it is a question of efficiency and priority; are you doing research to answer a question (the team approach) or for personal glory (the individual approach)?

With close to 5 years in the private sector, I know that research in biotechnology is far from perfect, but I see that a scientific environment can be created that has the best of both worlds. It is one where basic research teams are encouraged, performance and accountability are the prime concerns, investigator-initiated research is facilitated, and peer review is used to improve experimental design not discourage innovation. A world where scientists can come together to address significant issues while leaving their personal agendas at the door.

It is in this world that the real cures for disease will be found. When personalities are removed from the job, the job gets done. Consider a case in point: NASA. Can you name a basic scientist that helped put man on the moon? Now there was an example of true goal-oriented, scientific teamwork. And it took a government-academia-private sector collaboration. Perhaps a NASA model is what is needed in medical research to find cures for spinal cord injury, multiple sclerosis, cystic fibrosis, cancer and heart disease. For several years now, we have known many of the causative agents responsible for these diseases. So why are the cures so elusive?

Perhaps a new model for medical research is required to translate progress in basic research to the bedside. This enterprise first requires the vision that Kennedy gave NASA in the 1960s. It will require the kind of hard work that scientists applied to the space programme and, most importantly, the willpower to consolidate the best that government, academia and biotechnology have to offer to cure human disease.

ANDREW BAIRD

Andrew Baird PhD was on faculty at the Salk Institute and The Scripps Institute in La Jolla, CA, USA, and Adjunct Faculty at the University of California at San Diego. He is Vice President of Research and Development at Ciblex Corporation, a biotechnology company he founded in 1998. The comments presented here are solely those of the author and do not necessarily reflect the position of the company, its employees, board and advisors.

Pituitary Human GH and Creutzfeldt-Jakob Disease

In 1985, a link between CJD and treatment with pituitary-derived human growth hormone (pit-hGH) was acknowledged. There have been a number of reports of cases from the UK and abroad, but no details have been published concerning the UK population since 6 cases were detailed in 1991. Since then, the Department of Health has supported a small group (based at the Institute of Child Health in London) to undertake long term monitoring of pit-hGH recipients in the UK. The group has also had an active role in patient contact and co-ordination of resources for those at risk of CJD, and for those contracting the disease. We are pleased to be able to publish a summary of their work here.

Between 1959 and 1985, a total of 1883 patients were treated with pit-hGH, under the auspices of the MRC or the Health Services Human Growth Hormone Committee (HSHGHC) of the Department of Health and Social Security. It has been possible to trace almost all these patients through the Office for National Statistics and the NHS Central Register, and we have details of all deaths in the group.

Since 1991, most individuals have been contacted and advised of their risk by the clinician responsible for their continuing care or for prescribing the hGH. Their GPs' opinions were first sought as to whether they should be informed, and in most cases the GP was sent copies of the documentation before the patient. Some patients were not informed, where the GP or hospital clinician believed that it was not in their best interests to be made aware of the risk. Those informed were advised not to be organ or blood donors. Counselling was available in most regions to assist with the resulting considerable distress.

The justification for the embargo on organ donation by hGH recipients remains clear. There is no doubt that

neural tissue and contaminated neurosurgical instruments may transmit CJD, and concerns remain that non-neural tissue may also be incriminated. The difficulty of eradicating the prion from surgical equipment means special procedures are required for operations involving CNS tissue, and disposable instruments should be used when possible. Neurosurgeons should always be made aware of previous treatment with pit-hGH, and guidance is available for those undertaking procedures involving neural tissue.

The possibility of CJD transmission by blood transfusion has been much debated, but a report from the UK CJD Surveillance Unit found no evidence to support such a link. Nonetheless, a ban on blood donations is easy and appropriate. There is still no evidence that CJD may be transmitted to sexual partners or vertically to offspring, although this remains a concern of many treated individuals.

The number of cases of hGH-related CJD in the UK has increased. The first UK case occurred in 1985, and there were 6 at the time of the 1991 retrospective study. There have now been 34 deaths, representing 2%

of those treated. There have been 193 deaths from other causes in the treated group, but without any suspicion of clinical CJD. The world-wide total is now in excess of 120 cases, including at least 62 in France, which has a higher incidence than other countries. Elsewhere in Europe there has been only 1 case reported from The Netherlands. There have been 22 cases in the USA, and 5 cases in New Zealand (a relatively high number from a very small treated group).

The incubation period is generally more than 10 years from the middle time point of treatment. The clinical features of hGH-related CJD have been consistent in most cases. A cerebellar syndrome with prominent eye manifestations is typical, progressing to severe ataxia (particularly truncal in the early stages), myoclonus, incontinence, speech and swallowing disturbance, and ultimately inability to talk. Dementia has not been prominent, although some memory deficit is generally seen. These features differ from new variant CJD, where higher functional disturbance is prominent early in the illness. Death generally occurs within 12 months of presentation. Post mortem brain findings are distinct from sporadic and new variant CJD, particularly assisted by PrP immunofluorescence staining.

There is great interest in the genotype of the affected individuals, and the excess of individuals homozygous for a naturally occurring polymorphism at codon 129 on the prion protein gene has been noted in several studies. This finding does not, however, offer the prospect of a clinically useful test in quantifying the risk for an individual. Other diagnostic tests, useful during life, are still being evaluated.

Pit-hGH was manufactured in the UK by four different methods between 1959 and 1985, and it is still too early to speculate as to whether certain methods carry higher or lower risk. Incomplete records exist for many patients, but an attempt is being made to collate the data with a view to detailed epidemiological analysis.

If you would like to contact us, our group can be found at Human Pituitary Growth Hormone Follow-up, Institute of Child Health, University College London, 30 Guilford Street, London WC1N 1EH; Tel: 020-74040536.

PETER ADLARD, LEAH DAVIDSON,
MICHAEL PREECE

Metabolic Bone Disease - genetic, molecular and cellular aspects

A Festschrift for Iain MacIntyre FRS

13 July 2000

New Hall College, Cambridge

Further details from:

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Follows on from
the Bone and Tooth
Society meeting

The Society is always pleased to be able to award travel grants to members wishing to attend conferences. Thanks to Vicky Taylor, Stephen Gough, John Brameld, Leonie Welberg, Maria Dolores Julian, Christopher Lowry, Leslie Lai, Jasmina Ćirić, Zorana Penezić, Alison Mostyn and Pauline Jamieson for their reports below.

Fertility in the High-Producing Dairy Cow

Galway, Ireland, 20-22 September 1999

"There was much enthusiasm among those involved in trying to reverse the growing trend in infertility, which has more than likely resulted from focusing on genetically improving animals for yield alone. In order to reverse this trend, much remains to be determined about the metabolic and endocrine status of dairy cows, particularly those under the metabolic stress of high-yield production, including how this impacts on the endocrine control of their reproductive system."

72nd Annual Meeting of the American Thyroid Association

Palm Beach, FL, USA, 29 September-3 October 1999

"One of the most exciting areas is the role of the cytotoxic T lymphocyte associated-4 (CTLA-4) gene in the development of Graves' disease. We heard how polymorphism of this gene affects the function of the CTLA-4 negative regulatory pathway and how it may, therefore, contribute to the autoimmune disease process in general. Other presentations described the size of the genetic effect of the CTLA-4 locus in Graves' disease susceptibility and also its possible role in the development of thyroid-associated orbitopathy."

9th International Symposium on Ruminant Physiology

Pretoria, South Africa, 17-22 October 1999

"One of the revelations of the meeting for me was the idea that lactoferrin may be a receptor or binding protein for IGFBP-3. Craig Baumrucker gave a thorough description of work characterising the binding of these two molecules, followed by their internalisation and possible interaction with retinoic acid receptors in the nucleus of mammary epithelial cells to inhibit apoptosis."

29th Annual Meeting of the Society for Neuroscience

Miami Beach, FL, USA, 23-28 October 1999

"The poster sessions about the influence of perinatal manipulations on HPA regulation and behaviour were of a high quality. Recent findings that many of the effects appear to be modulated by maternal behaviour, rather than the 'stress' of the manipulation on the offspring directly, seem to have sparked renewed interest in this field. In particular, anxiety levels appear to depend on maternal behaviour early in life. However, for memory function there also seems to be a prenatal component that programmes behaviour, indicating that dams that treat their offspring 'better' may differ from other dams in other, possible physiological, aspects as well."

"An excellent new 'Itinerary Planner' service could be accessed from CD or via the Internet, and was really helpful to organise my timetable before the trip. This was important with 15 special lectures, 19 symposia, 119 slide sessions and countless posters; the author and keyword searches were particularly useful. The other wonderful service on offer was a complementary massage, which was great for back and neck relief after carrying the 120-page programme book for so many hours."

"Diversity was the major theme. Press releases ranged from the effects of space flight on the circadian timing system to the role of the thalamus in the neural basis of consciousness. Also highlighted were new advances in the molecular mechanisms of cell death and neural regeneration, and exciting developments in pain research and treatment using receptor internalisation technologies."

190th Meeting of the Society for Endocrinology

London, UK, 8-9 November 1999

"Sincere thanks for awarding me a conference grant. Without it I would have been unable to attend, as the economic downturn in Malaysia has resulted in all requests for conference leave overseas being refused, unless one is externally sponsored. It was a wonderful meeting with a very high standard of science, and an opportunity for me to meet colleagues whom I had not seen for nearly 3 years."

"The session about clinical endocrine databases was extremely interesting, dealing with many problems associated with forming national and international collections of data. It gave us an excellent opportunity to learn about the benefits and potential problems that might be encountered. Aspects concerning quality control for data entry and updating were particularly useful."

"Although I am not a nurse, I decided to go to the Nurses session. I was pleasantly surprised how interesting and accessible it was for a non-medic, and I thoroughly enjoyed it. The case presentations were particularly interesting and thought-provoking."

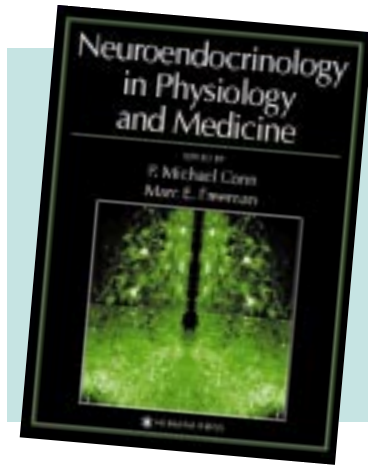
Molecular Endocrinology Workshop

London, UK, 10 November 1999

"The most valuable sessions were those that described the potential applications of techniques, and provided practical information while identifying possible pitfalls in using them. In this respect, David Sugden's session on competitive PCR and Helen Hurst's talk on *in vitro* methods for transcription analysis were particularly informative."

Neuroendocrinology in Physiology and Medicine

Eds P Michael Conn & Marc E Freeman,
Humana Press (distributed by Blackwell
Science Ltd: Tel: 01865 206233;
Fax: 01865 206026;
Email: medirect@blacksci.co.uk)
1999, \$125.00, ISBN 0896037258



This is probably the most comprehensive review of neuroendocrinology available, constituting a complete overview of the subject in basic science and clinical medicine. The publishers claim that the book is aimed at undergraduate and postgraduate students. Experience suggests that books of this nature rarely totally succeed. This one does, with qualifications.

Neuroendocrinology is a diverse subject. This is part of its fascination, but also poses problems for editors. To achieve complete coverage of the discipline, the book must be large. This one is no exception at over 500 pages, but I can say that most of them are worth reading, because I read them all!

The book is in six sections, from basic science to clinical medicine: Interactions between Nervous and Endocrine

Systems, General Neuroendocrine Regulation, Neuroendocrine Correlates of Stress and Behaviour, Neuroendocrine Regulation of Biological Rhythms, Neuroendocrine Pathology and Disease, and Emerging Areas of Neuroendocrinology.

Within the sections, each chapter is comprehensive and gives a good overview. All are written well, some very well indeed. The editors have opted for general, fairly short reading lists, which are mostly well balanced. However, in some areas readers without previous knowledge could receive an unbalanced view of where the seminal advances have been made.

Although generally very good, this book does have problems. Repetition is unavoidable, and probably advisable, but the history of pituitary

function is presented three times. I also doubt whether detailed discussion of the hormonal control of the onset of labour is strictly neuroendocrinology. These are minor problems. More serious, however, were the many typographical and graphical errors. In one chapter, the diagrams are bad and appear to be hand drawn. There is no excuse for such slipshod presentation in a book of this quality.

I found the clinical chapters dry in their presentation. This is an unfortunate contrast to the many excellent clinical endocrinology texts available today. I was also disappointed with the final section which concentrated largely on electrophysiology and the use of fos protein to identify neurones. Both are good techniques, but I had hoped to see some discussion of newer techniques - perhaps anti-sense labelling?

My criticisms are still relatively minor. This is a very good book. I do not think it is an undergraduate book, although individual chapters could make excellent reading for third year honours students. For postgraduate students of neuroendocrinology, however, I believe this book will become essential reading, and I strongly recommend it.

M C HARRIS
UNIVERSITY OF BIRMINGHAM

Hormone Therapy and the Brain: a Clinical Perspective on the Role of Estrogen

Victor W Henderson, Parthenon Publishing, 1999, £28.00, ISBN 1850700788

As our knowledge of the actions of estrogen in the brain grows, it becomes increasingly apparent that its role in the CNS is as important as its reproductive and cardiovascular effects. This monograph addresses its effect on the CNS in health and disease.

The impetus behind this work is the potential for therapeutic modulation of specific estrogen effects in neurological and psychiatric disorders. The author provides an overview of the many sources and targets of estrogen, and the effect of fine control of this hormone and its metabolites during the human reproductive cycle.

The dramatic effects of estrogen on brain architecture, through its influence on the formation, maintenance

and remodeling of neurons, are described. The author cites experimental manipulations in animals that show how these effects can be translated into modulation of development and behaviour. An exploration of estrogen's molecular genomic and non-genomic mechanisms of action is most valuable for illustrating how the variation of type, expression and distribution of ligand, receptor and interacting molecules may provide the diversity and specificity of the effects of estrogen and the anti-estrogens in different cell populations and processes.

The main section of this book considers functions and diseases of the CNS that are influenced by estrogen, or where imbalance in estrogen control

may be involved in pathogenesis. These include mood, cognition, dementia, cerebral vascular disease and other neurological disorders (movement disorders, epilepsy, multiple sclerosis and migraine headache). The evidence cited is from epidemiological observation of the clinical use of estrogen, most commonly in the form of HRT, endogenous variation during the menstrual cycle, puerperium and menopause, and experimental findings in animals and *in vitro*.

This book is a clear, well presented summary of much literature, utilizing in-depth reviews of specific topics and landmark research articles. It is readily digestible, with minimal use of specialist jargon, and is thoroughly illustrated with diagrams, tables and photomicrographs. It is a timely introduction and broad update that should be useful for neuroscientists, endocrinologists and clinicians alike.

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