

# Syn'apse

JOURNAL AND NEWSLETTER OF THE ASSOCIATION OF CHARTERED PHYSIOTHERAPISTS INTERESTED IN NEUROLOGY

- ▶ When gait isn't 'straight forward', how do you assess the ability to turn?
- ▶ A self-management workbook – influence on confidence and activity following Stroke: a report on the initial stage of developing the workbook
- ▶ A preliminary clinical study using RF BION® microstimulators to facilitate upper limb function in hemiplegia
- ▶ An audit of a physiotherapy vestibular rehabilitation programme for the treatment of patients with vestibular dysfunction



JOURNAL AND NEWSLETTER OF THE  
ASSOCIATION OF CHARTERED  
PHYSIOTHERAPISTS INTERESTED  
IN NEUROLOGY

[www.acpin.net](http://www.acpin.net)

SPRING 2004

ISSN 1369-958X



[www.acpin.net](http://www.acpin.net)

# Syn'apse

JOURNAL AND NEWSLETTER OF THE  
ASSOCIATION OF CHARTERED  
PHYSIOTHERAPISTS INTERESTED  
IN NEUROLOGY

SPRING 2004  
ISSN 1369-958X

## ACPIN'S AIMS

1. To encourage, promote and facilitate the exchange of ideas between ACPIN members within clinical and educational areas.
2. To promote the educational development of ACPIN members by encouraging the use of evidence-based practice and continuing professional development.
3. To encourage members to participate in research activities and the dissemination of information.
4. To develop and maintain a reciprocal communication process with the Chartered Society of Physiotherapy on all issues related to neurology.
5. To promote networking with related organisations and professional groups and improve the public's perception of neurological physiotherapy.
6. To encourage and participate in the setting of guidelines within appropriate areas of practice.
7. To be financially accountable for all ACPIN funds via the Treasurer and the ACPIN committee.

## Contents

<b>From the Chair</b>	2
<b>President's address</b>	
Putting the neurosciences to work in neurorehabilitation Professor Ray Tallis	3
<b>Articles</b>	
• When gait isn't 'straightforward' how do you assess the ability to turn?	6
• A self-management workbook – influence on confidence and activity following Stroke: a report on the initial stage of developing the workbook	8
• A preliminary clinical study using RF BION® microstimulators to facilitate upper limb function in hemiplegia	11
• An audit of a physiotherapy vestibular rehabilitation programme for the treatment of patients with vestibular dysfunction	15
<b>Articles in other journals</b>	20
<b>Focus on...</b>	
Sandra Stark – one of the first physiotherapists to inject botulinum toxin	23
<b>ACPIN News</b>	24
<b>Other news</b>	30
<b>Research forum</b>	32
<b>Exploring gait ACPIN March conference and AGM 2004</b>	34
<b>Reviews</b>	
• Conference on Parkinson's Disease – information sharing day	40
• PNF for the neurological patient	40
<b>Regional reports</b>	41
<b>Letters</b>	46
<b>Guidelines for authors</b>	47
<b>Regional representatives</b>	48



## From the Chair

Linzie Bassett M.C.S.P. SRP  
ACPIN Chairperson

Welcome to the Spring edition of *Synapse* and to my final report!

The time has come for me to step down as Chair after seven years; I have had many happy years working on the National ACPIN Committee and during that time developed close links with many like-minded neurophysio-therapists. It has been a privilege to work with such a dynamic and forward thinking association and I will certainly miss being part of the 'team'.

I handover to Nicola Hancock, current Vice-chair, who will be

200 delegates attending; this may be due to the introduction of the early bird offer! The day was a great success and a full report follows later.

Our second conference is on the theme of 'Hands on Neurophysiology', to be held on Saturday 13th November 2004 at Queen's Square, London.

ACPIN is hoping to host a programme at the CSP Congress, 2005 with 'Balance' being a potential topic. Watch out for further details.

Once again ACPIN was successful in its submission of motions for the



Linzie Bassett, the outgoing Chair of ACPIN, and Nicola Hancock, the new Chair at the recent ACPIN conference in Northampton on 'Exploring gait'.

formally elected as Chair at the Executive Committee meeting in May. I wish her and the new Committee every success.

On checking my numerous files recently, I discovered that ACPIN commenced in 1981 with 104 members. It is heartening to know that since then membership has grown to 1,400 and so far 900 members have renewed. To mark our 25 years as an association a planned Silver Jubilee celebration will take place at the next residential conference in March 2006.

By the time you receive this edition ACPIN will have hosted its first conference for 2004 on 'Exploring gait'. The topic has proved to be extremely popular with over

Annual Representatives Conference. The motions were concerned about the use of Botox, its availability and the appropriate staffing of such clinics. The only downside being that the motions have been placed on the secondary agenda for the day. We will update you in the November issue of the outcome.

To coincide with these motions it is encouraging to read that Coventry University have devised an injection therapy module in neurology. Its aim is to introduce the theory and practice of botulinum toxin injection therapy and develop the ability of students to clinically reason and to integrate the use of botulinum toxin as part of their management of patients presenting with neurological

dysfunction. See advert in this edition for further details.

*Synapse* is becoming a well recognised journal and with the changes to *Physiotherapy*, it is envisaged that we will receive an increase in articles for submission. As always I urge you to contribute to your journal. I would like to thank Louise Dunthorne, *Synapse* co-ordinator and Kevin Wade our graphic designer.

The website was updated in January and April this year. It provides an excellent communication link, however we experienced a few technical difficulties prior to the March conference. I can only apologise to members trying to download application forms who were unsuccessful. It transpires there was a broken link, which resulted in the failure to access the form. It is planned that an Executive Committee member will monitor the website on a weekly basis so that problems can be dealt with more efficiently.

Following a presentation by Julia McKenzie and Nigel Senior regarding the interactive CSP site, ACPIN is hoping to forge links, which will be an added bonus to all members.

Professor Ray Tallis, our President has been in post for two years. He continues to be a valuable asset to the Committee. Ray has kindly accepted our invitation to remain as President for a further year.

The revised constitution was formally ratified at the AGM on Saturday 20th March 2004. A copy of the constitution can be found in the November 2003 edition of *Synapse*.

Unfortunately there has been a slight delay in the much-awaited publication of the NICE guidelines on MS pack for physiotherapists. I believe the booklet is due out very shortly.

The NSF on Long Term Conditions is in the final stages of consultation, many members have commented on the document and we look forward to its publication later this year.

The Clinical Practice sub-group commenced a review of the Standards booklet in January 2004.

Each regional committee will play an active role in reviewing the booklet in preparation for a revised edition.

Accompanying this copy of *Synapse* is a research form. The National Committee would be grateful if you could spare a few minutes to complete the questionnaire and return it to ACPIN. Comments will be gratefully received and will facilitate the planning of future projects.

Finally, I would like to thank you as members for supporting ACPIN and making it what it is today – a strong clinical interest group.

I bid you farewell and wish the National Committee every success. I look forward to being a delegate at the next conference. Until then I shall go and help organise the 'parents and friends committee' at my daughter's school!

### ADDRESS FOR CORRESPONDENCE

92 Redacre Road, Boldmere, Sutton Coldfield, West Midlands B73 5EE.

email linziebassett@talk21.com

## AND HELLO FROM THE NEW CHAIR!

Firstly, I would like to thank the President and the Executive and National Committees for supporting me as I accept Linzie's offer of the Chair of ACPIN and hope that their faith in me will be rewarded as I attempt to continue with the incredibly high standard of work and commitment set by my predecessor.

I have worked in neurological rehabilitation for ten years as a clinician and in my current post I manage a team of both occupational therapists and physiotherapists working in neurology and palliative care at the Queen Elizabeth Hospital, King's Lynn. My contact with ACPIN began back in 1996 and I have been an Executive Committee member since 1998.

I aim to continue with a high standard of conference programmes for the membership, including our neurophysiology study day in November, a planned day on 'Pain and Neurodisability' in March 2005 and a celebratory residential conference in March 2006 – our silver jubilee! We are also hoping to fly the flag again at the CSP Congress in October 2005, having taken a break this year to replenish the funds and ensure a relatively stress-free handover at the helm.

The other work of the Committee will, of course, continue and develop, including liaising with the CSP on relevant documents, dealing promptly with all enquiries, facilitating relevant research and audit and updating the ACPIN website.

Finally, I know it has been said many times before, but ACPIN is for and about you, its membership, and I look forward to hearing from you... (but not all of you in my first week, please!)

Very best wishes,

Nicola Hancock  
nicolahancock@btinternet.com

# Putting the neurosciences to work in neurorehabilitation

Raymond Tallis MA FRCP, DLitt, FMedSci  
ACPIN President

### Background

In 1984, I published an article in *Physiotherapy* with the bold title 'Neurological rehabilitation: the next thirty years'.<sup>1</sup> It was partly predictive – saying how I thought things might develop – and partly prescriptive – saying how I thought things ought to go. My main theme was that, in the future, neurological rehabilitation would (and should) become ever more effective because it would be increasingly rooted in neuroscience; in particular in an understanding of the plasticity of the nervous system. Prediction, as someone once said, is a hazardous business – especially of the future. To put it more bluntly: those who live by the crystal ball often end up by eating ground glass. At any rate, two thirds through my 'next 30 years', it looks as if I got at least two important things wrong.

The first was that I missed something that has become increasingly apparent in the two decades since my paper: that the way we *organise* our services is at least as important as what we put into them. Doing routine things well and making sure that all patients have early access to multidisciplinary care, produces greater gains for patients than any differences in specific approaches to treatment - whether it be drug therapy or rehabilitative techniques.<sup>2</sup> My second error was to underestimate just how difficult it would be to ensure that the emerging neuroscience was translated into new treatments which would benefit patients. Even in 1984 the revolution in neuroscience was giving us a much more optimistic picture of the ability of the nervous system to recover from damage and giving us clues as to how we might promote those plastic

changes that underpin most recovery and yet this new knowledge was not shaping many of the rehabilitative techniques that we offered our patients.

Although the unexpectedly large benefits of organised care were gratifying, the failure of neuroscience to fully penetrate clinical practice was of considerable concern. While it is obvious that the care of patients with severe neurological disease has improved enormously, and many of our rehabilitation techniques bring great benefits, quite a few of our patients remain severely impaired and bitterly disappointed. It was therefore important to investigate why the clinical science of neurological rehabilitation was 'struggling to come of age'.<sup>3</sup> I discovered that I was not alone in my puzzlement and frustration: my concerns were shared by therapists, doctors and, most importantly, basic neuroscientists.

All of us were aware of the widening gap between, on the one hand, the scientific understanding of the drivers to spontaneous recovery in the nervous system and of the means by which it might be promoted and, on the other, the way rehabilitation techniques were introduced into clinical care. While we had much to be proud of, there was still a long way to go to meet our patients' aspirations and it was not clear that we knew the right road to take.

### The genesis of the report

The Academy of Medical Sciences, which was established in 1998, is comprised of the United Kingdom's leading medical scientists from hospitals, academia, industry and the

public service. Most importantly, it has almost equal numbers of clinical and non-clinical scientists. Its fundamental mission is to 'promote advances in medical science and to ensure that these are translated as quickly as possible into benefits for patients'.<sup>4</sup> It seemed as if it would be ideally suited to the task of investigating the gap between basic neuroscience and clinical practice in neurological rehabilitation. In April 2002, the Academy hosted a meeting of neuroscientists, clinical academics and NHS healthcare workers devoted to this issue. It was agreed that a Working Group should be established to investigate the matter in greater depth.

The aim of the Working Group was 'to identify, characterise and document opportunities arising out of advances in neuroscience to improve care of patients with neurological disability'.<sup>5</sup> In order to meet this aim, the Working Group sought to:

- identify the barriers to collaboration between researchers that hinder the translation of advances in basic neuroscience into treatments that will benefit patients;
- recommend methods by which these barriers might be overcome;
- suggest research structures that would promote exploitation of advances in neuroscience and indicate ways in which the short-fall of researchers in this field might be addressed and
- identify the resources, including funds, that are necessary to achieve these objectives.

This was, of course, very ambitious and in order to address these objectives, a Working Group of

twelve individuals was established. Approximately half of them were clinicians and half were non-clinical scientists. Therapy was well represented, with a physiotherapist (Professor Val Pomeroy), an occupational therapist and an expert neuropsychologist. It proved to be a fascinating group. Our meetings must have been one of the few occasions when an expert on stem cell implants met with an occupational therapist and a founding father of the Cochrane Collaboration sat down with a researcher into primate movement control. After about six months work, we drew up a draft report which was sent out for consultation: the views of clinicians (including members of the CSP and ACPIN), scientists, research funders, patient support groups, and science policymakers were sought. This resulted in quite significant modifications of the report. It was finally published and launched, two years after the original meeting at the Academy, on 29th March 2004.

#### Overview of the report

In this brief paper, I won't attempt to summarise what is a very long document. I would, however, strongly recommend those who are interested to obtain a copy for themselves from the Internet<sup>4</sup>. It has a substantial body of references to the current neuroscience literature. The thirteen Annexes summarising the present state-of-the-art in neuroscience and neuro-rehabilitation should be of interest to anyone who wants to have a crash course in the background science relevant to neurological rehabilitation! For the knowledge-hungry, there are further references to websites summarising yet more literature. The report has four sections and I shall say something about each.

Part 1 deals with the background. It alludes to the heavy burden of neurological disability. It gives some pretty grim statistics about the numbers of people who are currently

struggling with the chronic effects of neurological disease. This part also looks at the achievements and the limitations of present approaches to neurorehabilitation. In particular, it notes that more progress has been made in helping patients to adapt to impairments than in reducing or reversing impairments and concludes that we need to build on this by looking at ways of directly addressing impairments.

Part 2 surveys some key advances that seem relevant to new approaches to neurorehabilitation. These include:

- New research methodologies, such as: better trial design (from single case studies to mega-trials); improved – more illuminating and patient-meaningful – outcome measures; and novel techniques of research synthesis, such as have been used in the Cochrane collaboration, enabling us to take full advantage of the knowledge we have acquired already and don't reinvent the wheel or (worse still) the zeppelin.
- Understanding brain damage and recovery: These include: a deeper comprehension of neuroplasticity from developmental neuroscience; advances in cognitive neuroscience, which help us to identify those conditions most favourable to recovery of normal cognition and emotion and the central role of these in the restoration of other functions, such as motor activity; non-invasive neuroimaging with positron emission tomography, magnetic resonance imaging, EEG and magnetoencephalography singly or combined; and transcranial magnetic stimulation for directly studying, as well as promoting, plasticity.
- New treatment modalities: deep brain stimulation (for Parkinson's Disease and other conditions); neural transplantation - in Parkinson's Disease, Huntingdon's Disease, multiple sclerosis, stroke

and spinal cord injury and the use of neurotrophic factors and gene therapies to enhance neuroprotection and promote regeneration.

- Advances in current therapeutic approaches: maximising participation through rehabilitation with real-world occupational therapy; using those modes of physiotherapy to restore movement which have been shown to have a direct impact on the brain and the more extensive use of rehabilitation engineering both in assistive technologies and in delivering treatments.

Each of these advances is described in a little more detail in a series of 13 appendices giving state-of-the-art reports by experts in the field.

The conclusion of this part is that there are exciting opportunities to build on current rehabilitation techniques that focus primarily on adaptation to impairments, by using techniques that extend our ability to reverse impairments. The problem is that research does not inform clinical practice.

This latter problem is one that will be familiar to ACPIN members. It goes far beyond the interface between basic science and clinical practice. We are all of us struggling to ensure that what we do is evidence-based.

Part 3 – Recommendations – is about remedying this situation. The report echoes another Academy report on clinical science<sup>7</sup> which had noted a lack of appropriate research facilities, infrastructure and appropriately trained clinical scientists with a career structure to support them; inadequate funding for key clinical trials and increasing bureaucratic, ethical and legal obstacles to research. This is a picture that I suspect that ACPIN members who have tried to do research, or to get a research project funded, will recognise!

The report makes four main recommendations with many

detailed sub-recommendations. The key recommendations are as follows:

- *Recommendation 1* The NHS and academic community should collaborate to create a network of Regional Neurorehabilitation Research Centres (RNRCs) each closely associated with one or more universities.

This would bring together a critical mass of researchers with a major interest in advancing neurorehabilitation, ensuring closer, more continuous collaboration between clinicians, clinical scientists and basic scientists – including not only neuroscientists but also statisticians, bioengineers, and others with relevant expertise, psychologists, educationalists and social scientists. (Rehabilitation research needs to be even more multi-disciplinary than rehabilitation practice!) The RNRCs would relate, on a hub-and-spokes model to other providers. While RNRCs would initiate major programmes of research, smaller centres such as District General Hospitals would participate in these programmes and initiate smaller projects. Other care providers, who are unable for a variety of reasons to initiate research, would be able to contribute to the research effort by enrolling patients and helping to shape research protocols. This model has proved very effective in the National Translational Cancer Research Network. It reflects the general principle that research, and better care for the patients of the future, is everybody's business, not just the responsibility of white-coated pointyheads in their ivory towers. It also acknowledges the strong desire many practitioners have to contribute to the collective effort of advancing our knowledge and understanding.

- *Recommendation 2* Recruitment, training and career structures

should be improved as incentives for those wishing to undertake research into neurorehabilitation.

This is perhaps the most important of all the recommendations. It acknowledges the situation – familiar to many ACPIN members – where many clinicians are unable to participate in research because of a lack of resources, even though they have precisely the skills that are most needed to mediate between scientific advances and clinical practice. The Report makes strong recommendations for a clear-cut NHS-wide commitment to the support of high-quality research by clinicians such as physiotherapists. It argues that 'it should be possible to build a significant research component into the job descriptions of the new clinical leaders in the NHS' – such as consultant and specialist therapists. There are also recommendations for increasing the amount of 'hands-on' research experience during undergraduate and postgraduate training. Finally, it points out that 'full-time research should be a realistic option in the career pathway of appropriately qualified practitioners'.

- *Recommendation 3* deals with funding issues. It recommends that various funding bodies – The Higher Education Funding Council, The Department of Health, research councils (such as the MRC) and medical research charities should work together strategically to identify funds for establishing the RNRCs and supporting their research programmes.

- *Recommendation 4* a research culture should be fostered with RNRCs to ensure knowledge is disseminated.

This is driven by the acknowledgement that the relevant knowledge is very broad and drawn from disparate sources: a variety of basic sciences; an

equally wide range of clinical disciplines and, on top of this, expertise from other areas, such as education, sociology and so on. Joint meetings between basic scientists and clinicians are recommended and other forays such as collaborative websites and special issues of journals that cross disciplinary boundaries are also suggested.

#### Significance for the physiotherapy profession

There is much more in the report than I have mentioned, but constraints of space forbid more detailed discussion. Instead I would like to end with one or two comments that highlight the relevance of the report to neurophysiotherapists.

The advent of more science-based neurorehabilitation rooted in a deeper understanding of the biological mechanisms of recovery envisaged in the report, will not diminish the role of the physiotherapist. All laboratory and human research points to the conclusion that the environment in the wider sense, along with education, counselling, training with appropriate activities and specific techniques, will be crucial to determining the success of new treatments. Stem cells and other treatments will not work without the input of therapists. After all, a human being is a person in the world and not just a nervous system in a skull and a spinal cord or an ensemble of neural circuits. We have to attend to everything from synapses to the whole person, if we are going to help patients to face the problems of daily living and enjoy life to the full.

The emphasis on expanding research opportunities for physiotherapists, as part of building the research workforce, is a recognition of the unique skills of therapists as clinicians mediating between basic science and the patient's needs – devising meaningful outcome measurements, in the

design of clinical trials and in making the key assessments that will determine whether or not treatments are truly successful.

It is important to say this because, although both the CSP and the College of OT strongly welcomed the report, some medical groups felt that it not only under-rated the importance of social and environmental factors in rehabilitation, but that it undervalued what was already being achieved in rehabilitation. It is true that these matters were dealt with only briefly in the report simply because its theme was the *interface* between neuroscience and neurorehabilitation. There is, of course, more to the future of neurorehabilitation than that interface. Even so, bringing neuroscience closer to our everyday practice must be good for our patients; and bringing clinicians such as physiotherapists into the heart of that process must be good not only for our patients but for the future of the profession - which looks brighter than ever.

The report has evoked strong and sympathetic interest from top-level science policy advisors in the Department of Health, from the Research Councils and other research funding bodies such as the Stroke Association, and from the Minister of Science, Lord Sainsbury. Improving the ways we help neurologically disabled patients to close the 'ecological gap' between their abilities and the demands of the world they have to cope with, is now, it seems, a priority. Neurorehabilitation has a place on the top table along with heart disease and cancer.

This is another thing I didn't predict 20 years ago. I'm glad I got that wrong.

#### REFERENCES

- 1 Tallis R C *Neurological rehabilitation: the next thirty years*. Physiotherapy May 1984 70(5) 196-199.
- 2 Stroke Unit Trialists' Specialist Multi-Disciplinary Team (Stroke Unit) *Care for stroke in patients* (2000) In: Stroke Module of the Cochrane Database.
- 3 Pomeroy VP and Tallis RC *Neurological rehabilitation: a science struggling to come of age* Physiotherapy Research International 2002; 7(2):76-89.
- 4 *Mission Statement* The Academy of Medical Sciences.
- 5 Academy of Medical Sciences 2004 *Putting the neurosciences to work in neurorehabilitation*. London: The Academy of Medical Sciences. Unless otherwise stated, all quotations are directly from the report.
- 6 The web address is: [www.acmedsci.ac.uk/f\\_pubs.htm](http://www.acmedsci.ac.uk/f_pubs.htm)
- 7 Academy of Medical Sciences 2003 *Strengthening Clinical Research* London: The Academy of Medical Sciences.

Emma Stack GradDipPhys, MSc, PhD. Senior Research Fellow, Movement Disorders Group, School of Health Professions and Rehabilitation Sciences, University of Southampton, UK.

# When gait isn't 'straight forward'

## how do you assess the ability to turn?

### INTRODUCTION

For people with Parkinson's Disease (PD), difficulty turning is a notorious cause of freezing and falls (Bloem et al, 2001; Stack and Ashburn, 1999; Nieuwboer et al, 1998; Yekutieli, 1993; Giladi et al, 1992) and may lead to a physiotherapy referral. What do therapists record when turning is assessed informally, perhaps during a standard mobility test? How do their findings guide them? Turning is poorly understood in comparison with straight forward gait:

- Studies have been small, with young, healthy participants
- 'Step Count' and 'Turn Time' have dominated the literature
- Unsubstantiated claims have been made about 'normal' turning
- Few existing measures have been validated
- Laboratory-based protocols are unsuitable for use clinically or in PD research.

A new measure, the video-based Standing Start 180° Turn Test (SS-180), has recently been developed at the University of Southampton (Stack, 2003) and a paper submitted to *Physiotherapy* detailing its design, validation against a laboratory-based 'gold standard' and initial reliability. The test is currently being used in a number of studies. The purpose of this article is to raise awareness of the SS-180 and to encourage consideration of the issues associated with difficulty turning from the clinical and research perspectives.

### EARLY DEVELOPMENT OF THE SS-180

Details are presented and discussed in the paper currently under review by *Physiotherapy*. In summary, descriptors of turning were identified from the literature and existing video records and from the perspectives of researchers, clinicians and people with PD. The new test was drafted from a short-list of the descriptors identified: it measures Turning Steps, Turn Time, Turn Type and Turn Quality (i.e. Independence, Ground Clearance, Stability, Continuity and Posture) following one turn in each direction. Data from people with and without PD were used to validate video-based measurement against computerised 3-D motion analysis and to test intra- and inter-rater reliability: validity and reliability proved acceptable.

### DYSFUNCTIONAL TURNING IN PD

The SS-180 was developed during a Research Training Fellowship funded by the NHS South East and supervised by Professor Ann Ashburn, Professor of Rehabilitation at the University of Southampton. Although all the participants with PD interviewed during the constituent studies were independently mobile, three-quarters reported difficulty turning. The studies revealed close correlations between turning and balance control, PD severity and self-assessed disability. It is not surprising then that people with and without PD turn differently. Healthy adults turned efficiently, combining the rotational component of the SS-180 with advancing toward their target and little change was measured when turns in each direction were compared. People with PD turned less efficiently, completing the rotational component of the SS-180 'on-the-spot' before advancing to the target and demonstrating directional differences.

Such differences might be attributable to differences in either a) the stance adopted prior to turning (this possibility is being explored in a laboratory-based study at Southampton using a force plate and computerised motion analysis) or b) the use of visual input to guide turning (data has been collected in another study at Southampton and is being analysed).

### MAKING PREDICTIONS BASED ON TURNING

The work conducted to date using the SS-180 suggests avenues for diagnosis and prognosis based on features of the new test. The SS-180 may have a value in diagnosis, as turning difficulties are characteristic of PD. Thigpen et al (2000) concluded that 'a functional assessment that accurately measures difficulty turning would be a useful clinical tool for the early recognition of those individuals at risk of falling'. After considerable research, certain features of the SS-180 could eventually be considered 'clinical features useful in the diagnosis of PD' (Rao et al, 2003) or predictive of falls. A study using the test to predict further falls is underway at Southampton.

### THERAPEUTIC IMPLICATIONS

In keeping with Plant et al (2001), who defined physiotherapy in PD as maximising functional ability 'through movement rehabilitation within a context of education',

findings from this work suggest that the following targets have therapeutic potential, though further research is needed:

- Balance Retraining as a link between balance and turning has been demonstrated.
- Improving Axial Rotation to facilitate head movement (and vision) during turning.
- Promote Adaptations (eg slow down).
- Modify the Environment so that tight turns in tight spaces are minimised.
- Cognitive Strategies for those who freeze prior to beginning to turn.
- Promote Favoured Direction if one way is easier or safer.

### CONCLUSION

The SS-180 is a simple yet comprehensive test of turning in each direction, measuring Turning Steps, Time, Type and Quality: early investigations suggest that it is valid and reliable. People with and without PD perform the new test differently and the ability of people with PD to turn from a standing start is closely associated with their level of balance control and disease severity. The studies completed to date suggest that the SS-180 may have diagnostic and prognostic applications and have highlighted a number of potential physiotherapy targets for people experiencing dysfunctional turning. The studies completed already are being written up for publication and the first paper has been submitted to *Physiotherapy*. A number of studies are being conducted using the SS-180 and others are planned. A standing-start protocol is recommended for even the informal observation of turning in clinical practice.

### REFERENCES

- Bloem B, van Vugt J, Beckley D (2001) *Postural instability and falls in Parkinson's Disease Advances in Neurology* 87: 209-223.
- Giladi N, McMahon D, Przedborski S (1992) *Motor blocks in Parkinson's Disease Neurology* 42: 333-339.
- Nieuwboer A, De Weerd W, Dom R, Lesaffre E (1998) *A frequency and correlation analysis of motor deficits in Parkinson patients Disability and Rehabilitation* 20: 142-150.
- Plant R, Jones D, Ashburn A, Lovgreen B, Handford F, Kinnear E (2001) *Parkinson's Disease Physiotherapy Evaluation Project UK, Executive Summary, October 2000 Synapse Spring* 2001: 10-12.
- Rao G, Fisch L, Srinivasan S, D'Amico F, Okada T, Eaton C, Robbins C (2003) *Does this patient have Parkinson's Disease? Journal of the American Medical Association* 289: 347-53.
- Stack, E (2003) *Movements used during turning and factors influencing the way in which people with Parkinson's Disease turn PhD Thesis, University of Southampton.*
- Stack E, Ashburn A (1999) *Fall-events described by people with Parkinson's Disease: implications for clinical interviewing and the research agenda Physiotherapy Research International* 4: 190-200.
- Thigpen M, Light K, Creel G, Flynn S (2000) *Turning difficulty characteristics of adults aged 65 years or older Physical Therapy* 80: 1174-1187.
- Yekutieli M (1993) *Patients fall records as an aid to designing and assessing therapy in parkinsonism Disability and Rehabilitation* 15: 189-193.
- ADDRESS FOR CORRESPONDENCE**  
 Dr Emma Stack  
 Rehabilitation Research Unit  
 Mailpoint 886  
 E Level  
 Southampton General Hospital  
 Tremona Road  
 Southampton  
 SO16 6YD, UK  
 Telephone 023 8079 8669  
 e-mail els1@soton.ac.uk



# A self-management workbook

## – influence on confidence and activity following Stroke: a report on the initial stage of developing the workbook

This report gives an account of research work that is part-supported by an ACPIN research bursary. The background to the research and the development of a self-management workbook for people following stroke is described here and the overall aim of the study will be to test the effects of the workbook on confidence about progress following stroke.

### BACKGROUND TO RESEARCH

There has been relatively little exploration of psychological factors and self-management following stroke compared to other chronic disease such as arthritis, cancer and heart disease (Ewart 1992; Thompson and Collins 1995; Watson et al 1999). However, it has been shown that self-management interventions can have a major positive impact on physical and psychological health status in other chronic diseases and these interventions may be useful following stroke.

To gain an understanding of self-management it is necessary to consider self-efficacy from a theoretical perspective. Broadly, self-efficacy is concerned with a person's expectations about the future and is a pivotal

construct within social cognitive theory. Bandura (1977, 1989) defined self-efficacy as 'the conviction that one can successfully execute the behaviour (s) to produce a desired outcome'. That is the confidence in one's own ability to successfully initiate and maintain a change in behaviour.

Most people have had no prior experience of a stroke and what to expect, consequently their expectations of the future will be shaped by many events and experiences specific to their own situation. Self-efficacy beliefs are thought to be more task and situation specific in which an individual will make judgements depending on whether they personally believe they have the skills necessary to achieve their desired goal. An individual will use several sources of information to make their judgements. One of the most powerful sources has been found to be mastery experiences obtained through gauging the success of their efforts and actions. Put simply success raises self-efficacy, failure lowers it.

A second important source of self-efficacy information is vicarious experience, gained by watching the efforts and events of others in a similar situation. This is particularly evident when people are uncertain about their own abilities and judgements. These two sources of self-efficacy (mastery and vicarious experience) are often incorporated into chronic disease self-management programmes.

There are unique circumstances following stroke compared to other chronic diseases. The uncertainty regarding recovery and the often long period of rehabilitation may lead some individuals to rely more on the beliefs and attitudes of professionals with regards to their progress. This may influence the development of self-management skills. A sense of disappointment when or if not making a full recovery may also place the person at greater risk of depression (Ellis-Hill and Horn 2000; Parikh et al 1990; Robinson-Smith et al 2000).

Although research in stroke self-management is scarce, results from a project in Scotland developing a self-help work book for stroke have been encouraging in targeting the levels of depression (Morrison et al 1998). As such, self management programmes which take into account individual goals and values, and encourage self-management practices at home may help to alleviate some of the inactivity, boredom and helplessness experienced by stroke survivors (Lewis et al 2001; Morrison et al 2000). Nevertheless, the relationship between levels

of activity, successful attainment of goals, and confidence in self-management practices following stroke has yet to be examined in relation to the psychological constructs such as self-efficacy and mood.

The aim of the workbook was to provide vignettes of stroke survivors with strong self-efficacy, provide practical solutions to common problems and include a diary section for a record of mastery experiences.

### STAGES OF DEVELOPMENT OF THE WORKBOOK

The preparation and development prior to the final production of the workbook took several months. The various stages are described below.

- An extensive literature review was undertaken into psychological theory relating to self-efficacy, self-management and mood. In addition the literature relating to chronic disease self-management was explored. A good review of this area has been written by Barlow (2002).
- Consultation was carried out with a number of stroke professionals, members of stroke clubs and stroke survivors at different stages of their rehabilitation. Several issues were explored eg common problems post stroke, existing stroke literature and the difficulties of coping with discharge from therapy services.
- Subjects were recruited for the ten vignettes. Therapy teams nominated people they thought had strong perseverance and coping skills. Subjects were included to represent a range of stroke severity and other demographics eg age, ethnic group, social status etc.
- Semi-structured in-depth interviews were carried out with ten subjects. These took on average about 1-2 hours and several issues were explored relating to progress following stroke. Probe questions encouraged reflection on personal strengths and efforts rather than therapy intervention. Subjects had all experienced extensive periods of hospitalisation and none had made a complete recovery. All had experienced difficulties which had made them feel very low at times, but had made improvements largely (they felt) through their own efforts. They all exemplified behaviour of self-efficacy in the face of their own individual challenges post stroke.
- The interviews were transcribed and analysed. Short summaries were written for each person and key quotes were identified that illustrated behaviour of strong self-efficacy. The summaries were checked by each subject for accuracy, they were also encouraged to add any further points if they wanted to. The ten vignettes formed Section 1 of the workbook.
- Section 2 of the workbook included examples of common problems and solutions provided by some

of the subjects. A clear explanation of each problem was written eg painful shoulder, difficulties with concentration, boredom. Further consultation and input was provided by colleagues from Occupational therapy and Speech and Language therapy. However the emphasis of this section was to provide solutions from other stroke survivors, so medical terminology was kept to a minimum.

- Section 3 was aimed at showing some of the activities carried out on a daily basis by each of the ten subjects. Each person agreed to being photographed carrying out their favourite exercise or activity. These ranged from sitting at the computer, gardening and various exercises which they felt had helped their progress. These activities had gradually evolved into their the subject's home programme.
- Section 4 was a diary section which was designed to encourage users to make a note of small personal targets and keep a record of progress on a daily basis. A scale to record confidence level has also been developed and is included in the workbook.
- The first draft was produced in collaboration with a graphic designer. The photographic work was funded by the ACPIN bursary (£432), and the remainder was funded by a £2000 grant from the local Roundtable Society. It was then checked by all contributors (including all ten of the subjects), and the final version has now been printed in preparation for the main study.

### PLAN FOR MAIN STUDY

The aim of the main study will be to test the effects of the workbook on confidence about progress following stroke. The relationship between self-efficacy, activity levels and mood will also be examined.

A series of ten single case studies will be employed using a Multiple AB Design. The self-management workbook will be introduced as an intervention and it will be used for a period of four weeks by each subject following training sessions provided by the researcher. The workbook will not replace therapy but aims to provide an opportunity for the stroke survivor to develop confidence and self-management skills relevant to their own stroke. Therapy teams have all given their support for the study to proceed alongside any other treatment being provided and they have agreed not to intervene with any activity associated with the workbook. Randomisation of the order of intervention (introduction of the workbook) will be carried out to ensure internal validity and reduce the effect of nuisance variables.

Subjects (n=10) with a confirmed diagnosis of stroke, that have some residual activity limitation and participation restriction will be recruited from a local



stroke unit and intermediate care team (neuro). Subjects with severe cognitive and language impairments will be excluded. Ethical approval has been obtained for the project from Merton and Sutton Local Research Ethics Committee.

All measures have been piloted with stroke patients meeting the inclusion criteria, and are suitable for the research design. Self-efficacy will be measured by a Stroke Self-efficacy Scale (developed for this experimental stage) and the General Self-efficacy Scale (Schwarzer and Jerusalem 1995). Perceived control (a construct likened to self-efficacy) will be measured by the Recovery Locus of Control Scale (Partridge et al 1989). The secondary domains of Activity and Participation will be measured by the Rivermead Activity of Daily Living Scale (Lincoln 1990); Rivermead Mobility Index (Collen and Wade 1991) and the Subjective Index of Physical and Social Outcome (Trigg and Wood 2000). Mood will be measured by the Hospital Anxiety Depression Scale (HAD) (Zigmond and Snaith 1983)

The study forms the final stage of a part-time PhD. Three previous studies have underpinned the development of the self-management programme and design of this study. Data collection is expected to be completed by May 2004. A second report of the findings of this study is planned for the next edition of Synapse (Autumn, 2004).

## REFERENCES

Bandura A (1977) *Self-efficacy: towards a unifying theory of behavioural change* Psychological Review. 84 (2) pp191-215.

Bandura A (1989) *Human agency in social cognition theory* American Psychologist. 44 (9) pp1175-1184.

Barlow J, Wright C, Sheasby J, Turner A, Hainsworth J (2002) *Self-management approaches for people with chronic conditions: a review* Patient Education and Counselling. 48 pp177-187.

Collen FM, Wade DT, Robb GF, Bradshaw CM (1991) *The Rivermead mobility index: A further development of the Rivermead motor assessment* International Disability Studies. 13 pp50-54.

Ellis-Hill C and Horn S (2000) *Change in identity and self-concept: A new theoretical approach to recovery following a stroke* Clinical Rehabilitation. 14 pp279-287.

Ewart C (1992) *The role of physical self-efficacy in the recovery from a heart attack* In: R. Schwarzer Self-efficacy: Thought control of action. Philadelphia, USA: Taylor and Francis.

Lewis S, Dennis M, O'Rourke S et al. (2001) *Negative attitudes among short term stroke survivors predict worse long term survival* Stroke. 31 pp1640-1645.

Lincoln N and Edmans J (1990) *A re-validation of the Rivermead ADL scale for elderly patients with stroke* Age and Ageing. 19 pp9-24.

Morrison V and Johnston M (1998) *Improving emotional outcomes following acute stroke: A preliminary evaluation of a work-book based intervention* Scottish Medical Journal. 43 pp52-53.

Morrison V, Johnston M and MacWalter R (2000) *Predictors of distress following an acute stroke: disability, control cognitions, and satisfaction with care* Psychology and Health. 15 pp395-407.

Parikh R, Robinson R, Lipsey J et al (1990) *The impact of post stroke depression on recovery in ADL over a two year follow-up* Archives of Neurology. 47 pp785-789.

Partridge, C and Johnston M (1989) *Perceived control of recovery from physical disability: Measurement and prediction* British Journal of Clinical Psychology. 28 pp53-59.

Robinson-Smith G, Johnston M and Allen J (2000) *Self-care, self-efficacy, quality of life, and depression after stroke* Archives of Physical and Medical Rehabilitation. 81 pp460-465.

Schwarzer R and Jerusalem M (1995) *Generalized Self-Efficacy scale* In Weinman J, Wright S and Johnston M Measures in Health Psychology: A User's Portfolio. Causal and Control Beliefs (pp. 35-37). Windsor, UK: NFER-NELSON.

Thompson S and Collins M (1995) *Applications of perceived control to cancer: an overview of theory and measurement* Journal of Psychosocial Oncology. 13 (1/2) pp11-26.

Trigg R and Wood V (2000) *The subjective index of physical and social outcome: A new measure for the use with stroke patients* Clinical Rehabilitation. 14 pp288-299.

Watson M, Haviland J, Greer S et al (1999) *Influence of psychological response on survival in breast cancer: a population-based cohort* Lancet. 354: pp1331-1336.

Zigmond A and Snaith R (1983) *The hospital anxiety and depression scale* Acta Psychiatrica. Scandania. 67 pp361-370.

## ACKNOWLEDGEMENTS

ACPIN and Roundtable (Wallington and Carshalton)

PhD Supervisors: Dr Cecily Partridge and Dr Anne Mandy

# A preliminary clinical study using RF BION® microstimulators to facilitate upper limb function in hemiplegia

## INTRODUCTION

This is a study being run by the University of Southampton in partnership with the Alfred Mann Foundation, a non-profit medical research organisation in the US which is funding the research. It is an experimental study with a small number of participants to test the feasibility of using radio frequency Bion (RFB) electrical stimulation devices to improve motor re-learning and recovery of arm and hand function following stroke. It is currently on review by an ethics committee, and we hope to recruit our first participant in June this year.

## BACKGROUND

Various longitudinal studies have investigated the long-term outcome following stroke: Kwakkel in his review quotes that 70% to 85% of patients become independent in walking ability, whereas for 30% to almost 66% of patients the paretic arm remains without function (Kwakkel et al 1999). Upper limb function is clearly a major problem and many therapeutic approaches to recovery are available, though controversy exists about their effectiveness (Feys et al, 1998).

Since Liberson designed the first drop-foot stimulator in 1960 (Liberson et al 1961), Functional Electrical Stimulation (FES) is one therapeutic technique that has been used to facilitate movement in people who have suffered an upper motor neuron lesion, particularly as a result of either a stroke or spinal cord injury. Since then it has been accepted by only a small number of clinicians and therapists for a variety of reasons including insufficient reliable evidence. Although there have been a vast number of papers published, they have tended to be with small numbers of subjects and weak methodology. Another important reason may be lack of clinical success when it is used without adequate training because of the need to precisely position electrodes and adjust stimulation parameters.

Recently there have been more promising results from larger research projects and a systematic review (de Kroon 2002) found evidence for improved upper limb motor control with surface FES systems, although the evidence for improved function was unconvincing. In the UK, the Odstock drop-foot stimulator has probably gained more acceptance than any other FES device. This success is due not only to research evidence but also strong clinical support and education of therapists mainly by the Department of Medical

Physics and Biomedical Engineering at Salisbury Hospital ([www.salisburyfes.com](http://www.salisburyfes.com)). Despite this, there are other reasons for the general lack of acceptance of FES devices; two are most important. Firstly the idea of wearing a device that requires careful donning and doffing and only works well when electrodes are very carefully positioned over the muscles does not appeal to many patients and clinicians alike, and secondly, rehabilitationists may be more interested in an intervention that can facilitate recovery rather than one which is effectively a life-long orthosis.

This project aims to address both these issues by using an implantable microstimulator that can remain implanted even if no longer needed and a system that is designed to facilitate recovery by supporting voluntary movement rather than replacing it.

## THE BION MICROSTIMULATOR

The radio frequency Bion (RFB) device has been developed by the Alfred Mann Foundation in the US. It is an injectable cylindrical microstimulator with a cathode electrode at one end and an anode at the other. It can be implanted through a small incision (5mm) using a cannula, thus reducing the expense and risks associated with other implantable devices due to the surgical procedure and the presence of leads within the body. *Figure 1* shows the RFB and the instruments used for implantation.

### THE RF BION® DEVICE

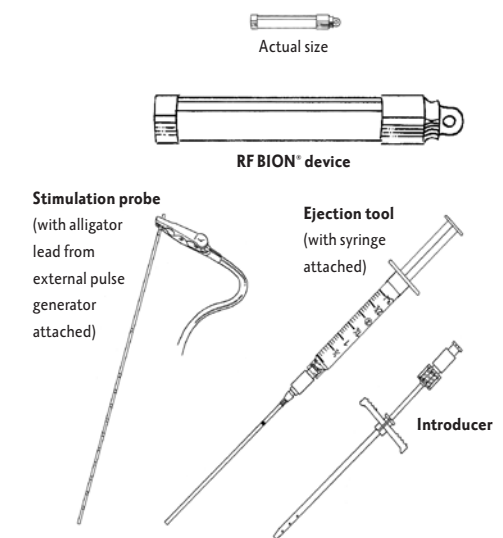


Figure 1

The RF BION® microstimulator and the insertion tools. A suture is attached to the eye in the end of device that enables it be withdrawn if necessary for up to two weeks following insertion.



Once implanted, the RFB receives power as well as stimulation commands (data) via a 2MHz RF inductive link from the external RF coil, which is connected to the BION Control Unit. One coil can simultaneously control several separately addressed RFBs implanted near each other. The advantage this implanted system has over surface stimulation is that both deep and superficial muscles can be individually activated allowing more selective control of movement, which is particularly useful in the forearm and hand. Similar devices have been used in the US in the treatment of the subluxed shoulder. RFBs are currently also being tested in the US in the treatment of sleep apnoea. By comparison these are simple applications requiring minimal control of stimulation. In the arm rehabilitation project, developing the control system to activate the individual devices appropriately to facilitate a normal, functional movement is the major challenge.

**PROJECT PLAN**

A minimum of six and a maximum of fifteen participants will be recruited to the study which will be based at Southampton General Hospital. They will be aged 18 or over and will have had a stroke at least three months prior to recruitment with some impaired arm and hand control. They need however, to have some activity in their finger flexors to allow the possibility of a functional grip, to have sufficient elbow flexion to bring their hand to their mouth and to have some shoulder control in order to direct movement of the arm. The study will involve development of the new system with the participants and repetitive testing using outcome measures mentioned below, which will be demanding in terms of time and energy.

RFB devices will be implanted into the forearm to

activate extensors carpi ulnaris and radialis, extensor digitorum superficialis, extensor pollicis longus and abductor pollicis. By positioning devices either adjacent to the nerve or within the muscle itself, close to the motor point, we expect to be able to activate these muscles using four devices. In the upper arm we will use two more devices implanted to activate the medial and lateral heads of triceps. With this combination of implants we hope to be able to support elbow extension, wrist extension and opening of the hand. By ‘switching off’ the finger and thumb devices participants will be able to use their own remaining control of finger and thumb flexion to grasp an object; while continued stimulation to the wrist extensors will maintain a functional hand position for grasping.

The project falls into three phases, and during each phase there will be time spent in the lab developing and testing the system and a period of time where the participants use the system at home as part of a daily exercise programme. The first phase lasts five months and a pre-programmed cyclic stimulation system (each RFB is active for a fixed period with individually assigned predetermined parameters (amplitude, rise and fall time etc)) will be developed and tested. Figure 2 illustrates this pre-programmed, fixed time sequence of movements for the different muscle groups stimulated.

At the end of phase 1, participants will be invited to continue on to phases two and three. During the second phase triggers operated either by the therapist or the patient will allow stimulation periods to be varied. Participants will be able to use this system at home, while in the laboratory we will design and test ways of using signals from sensors such as accelerometers, goniometers or pressure switches to control the output from each device so that stimulation is controlled by the user’s movement rather than activated consciously by them or others. The rationale that underpins this approach is that if the stimulation is responsive to the user’s needs, enabling them to successfully achieve a variety of simple tasks, then motor-learning will be enhanced.

Figure 3 illustrates an example of how sensors may be used to trigger changes in stimulation and forms the basis for the stimulation sequence that will be produced by the control system in phase three. The sequence illustrates activation of triceps to reach for and replace the target object. Activation of wrist and finger extensors opens the hand and, when the object is touched a signal from the pressure sensitive mat triggers stimulation to the finger extensors to be switched off while stimulation to the wrist extensors is maintained, allowing the object to be grasped. After the object has been ‘used’, a signal from the pressure sensitive mat detects when the object is replaced on the mat triggering the fingers to be re-activated to release the object.

**PHASE 1 TYPICAL STIMULATION SEQUENCE**

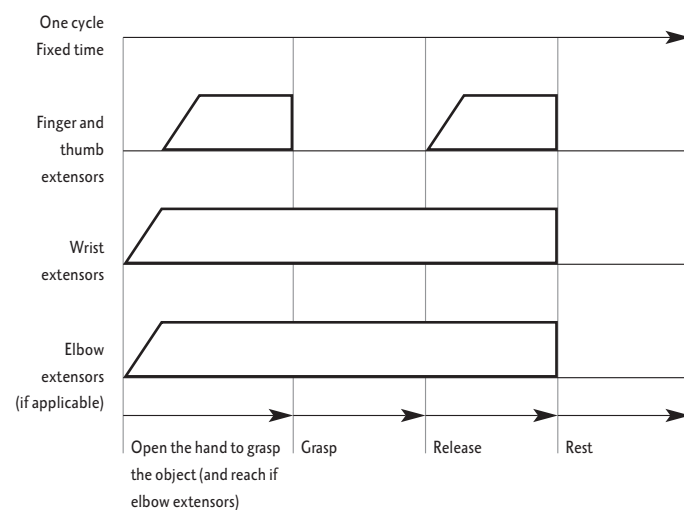


Figure 2

**OUTCOME MEASURES**

Changes in motor control and function during the course of the study will be tested using conventional outcome measures – the Action Research Arm Test and the Fugl-Meyer (upper limb section). Throughout the study the effect of stimulation on muscle force, motor control, antagonist co-activation during active flexion and extension and response to passive stretching will be assessed in a specially designed rig. Figure 4 shows the output from the tracking test in which the participant attempts to follow a tracking target, moving sinusoidally across a screen, by flexing and extending their wrist. In this example of a normal unimpaired participant there is reciprocal inhibition between the two muscle groups and accurate tracking, but participants who have poor control of movement and spasticity demonstrate less accurate tracking and co-activation between the two muscle groups. Indices have been derived to quantify co-activation and we will be interested to see whether there is improvement after the RFBs have been used for functional exercise over a period of about twelve weeks in each phase of the study.

**FUTURE WORK**

This is an ambitious project which we expect will take about 30 months. At the end, if we have a system that

**POSSIBLE SET-UP FOR PHASE 3 IN WHICH STIMULATION IS CONTROLLED BY BODY-WORN SENSORS AND A FORCE SENSITIVE MAT**

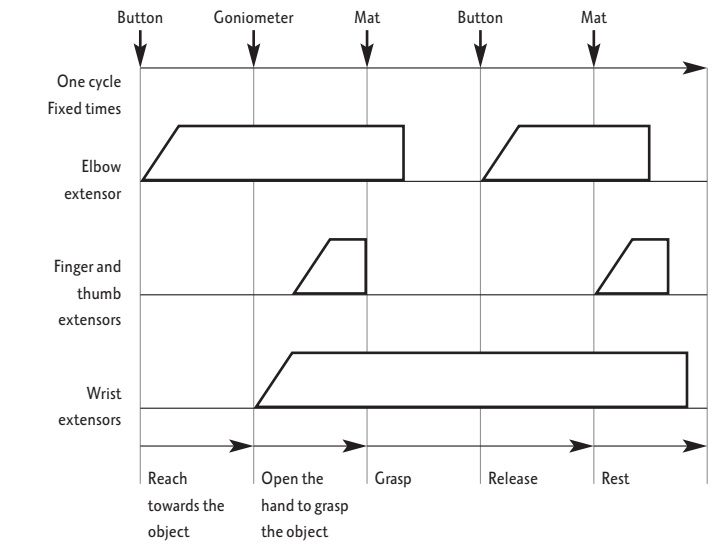


Figure 3

works and sufficient evidence for its effectiveness in improving arm and hand function, then we shall design and perform a clinical trial. The Alfred Mann Foundation have been designing and testing a series of Bion devices. Future generations of devices are

**EXAMPLE OF OUTPUT FROM THE WRIST RIG**

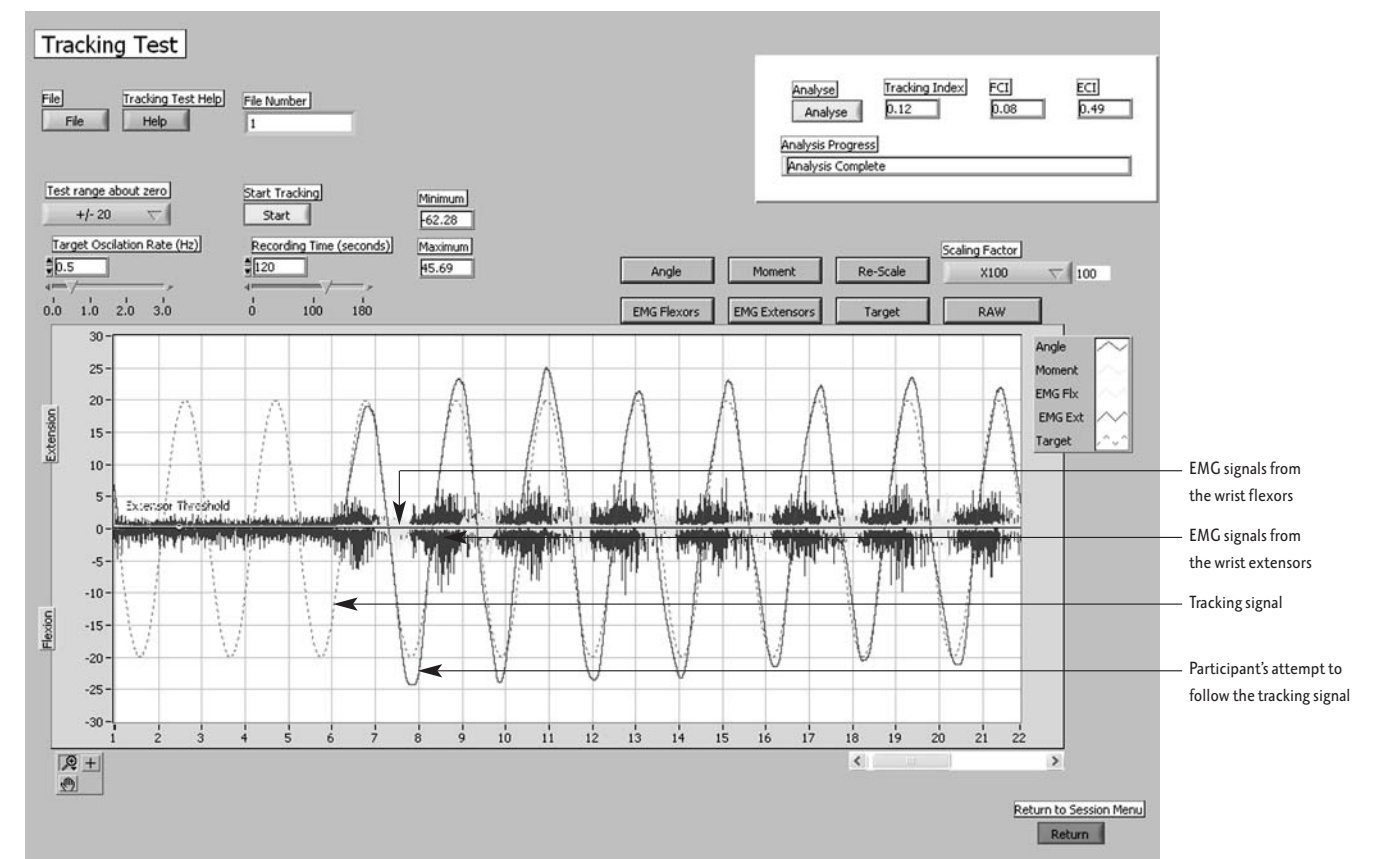


Figure 4



currently being developed and these include battery-powered devices that will not require an inductance coil and sensing devices that will be able to 'talk' to stimulating devices, thus removing the need for external sensors. The possibilities are very exciting and this project marks an important milestone in the evolution of FES.

#### ACKNOWLEDGEMENTS

Alfred Mann Foundation, 28460 Avenue Stanford, Valencia, CA 91355, USA. [www.aemf.org](http://www.aemf.org)

David Pandyan and Philip Wright who designed the wrist rig, and Scott Notley who designed the software.

#### REFERENCES

- De Kroon JR, van der Lee JH, Izman MJ, Lankhorst GJ (2002) *Therapeutic electrical stimulation to improve motor control and functional abilities of the upper extremity after stroke: a systematic review* Clinical Rehabilitation Vol 16: pp350-360.
- Feys HM, De Weedt W, Selz BE, Steck GA, Spichiger R, Vereek L, Putman K, and Van Hoydonck G (1998) *Effect of therapeutic intervention for the hemiplegic arm in the acute phase after stroke: a single blinded, randomised controlled multi-centre trial* Stroke; Vol 29, No 4: pp785-792.
- Kwakkel G, Kollen B and Wagenaar R (1999) *Therapy impact of functional recovery in stroke rehabilitation* Physiotherapy; Vol 85, No 7, pp377-391.
- Liberson W, Holmquest H, Scott M (1961) *Functional electrotherapy: stimulation of the common peroneal nerve synchronised with the swing phase of gait of hemiplegic subjects* Archives of Physical Medicine and Rehabilitation, Vol 42: pp202-205.

# An audit of a physiotherapy vestibular rehabilitation programme for the treatment of patients with vestibular dysfunction

Caroline Greenaway

#### PURPOSE

A before and after prospective study to evaluate a physiotherapy vestibular rehabilitation programme and determine its rehabilitation effect on patients with vestibular dysfunction.

#### AREAS TO BE INVESTIGATED BY THE AUDIT

1. Time scale of the intervention
2. Effectiveness of the intervention
3. Patient compliance with the programme

#### METHOD

The audit included all patients referred for vestibular rehabilitation who completed treatment between August 2001 and November 2002.

Patients were put on the waiting list to receive an appointment. During this time they were asked to complete a Dizziness Handicap Inventory (DHI) questionnaire (Jacobson and Newman 1990) (scale of 0-100, higher score = worse symptoms) and Visual Analogue Scale (VAS) (scale of 0-10, higher score = worse symptoms) to record perceived symptom severity. This was in order to detect change without intervention (ie spontaneous recovery). Pre-therapy outcome measure scores were compared with scores at initial and final appointments.

Patients attended an initial group session where they handed in their previously completed DHI and VAS. Second identical DHI and VASs were completed at the beginning of the session (before any treatment). Standard progressive vestibular rehabilitation exercises (as devised by Cawthorne 1944, Cooksey 1946) were performed under close supervision by 2-3 trained physiotherapists. The therapists scored each exercise in accordance with subjective patient symptom reports (0 = no symptoms, 1 = mild symptoms, 2 = moderate symptoms, 3 = severe symptoms). Patients stopped once the dizziness prevented progression onto more challenging exercises.

The exercises (a maximum of three) which most reproduced the individual patients' symptoms were chosen for the patient to perform as home exercises until the next individual follow up with a trained physiotherapist. Patients were instructed to complete each of their three exercises one minute at a time for a total of three minutes (or until dizziness prevented continuation). The three exercises were to be completed three

times per day (ie nine minutes of exercises three times per day). It was explained that the exercises must provoke symptoms to be effective. The patients were invited to record the number of exercises performed daily and to compile a weekly total score to enable assessment of compliance throughout the treatment period. Patients were advised on progression of the exercises once symptoms were scored as 'mild'. At each follow up appointment, exercises were scored and progressed at a rate appropriate for the individual. The Hallpike/Epley manoeuvre (Dix and Hallpike 1952, Epley 1992) was performed at the discretion of the treating physiotherapists for appropriate patients and recorded by the therapists. During therapy sessions patients were educated regarding the cause/nature of their disorder and methods of treatment.

On discharge, the patients again completed the DHI and VAS.

#### RESULTS

Results were analysed using *Microsoft Excel*. Forty eight patients (see *Figure 1*) were included in the audit, 35 females (73%) and thirteen males (27%) with an age range from 18-91 years (mean 55 +/- 17.36). A maximum of eight patients were included in each

#### AGE RANGES OF PATIENTS IN YEARS

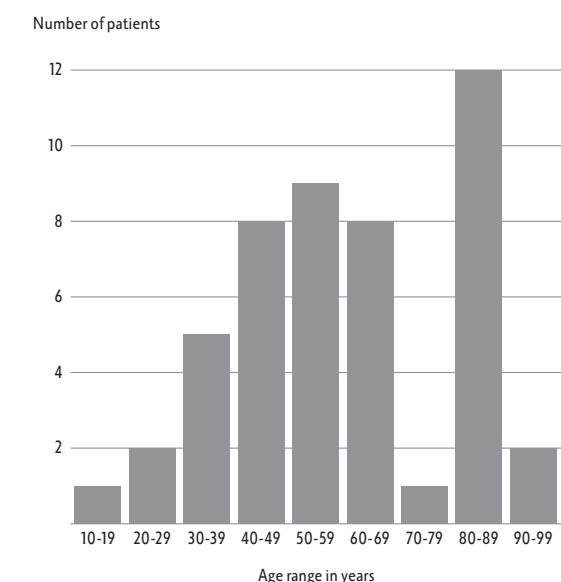


Figure 1

assessment group, supervised by at least two fully trained physiotherapists. On average, the assessment phase took 1.5 hours patient contact time and 0.75 hours administration time.

Follow up appointments of 30 minutes were on a 1:1 basis to enable the programme to be adjusted to best suit individual needs.

Symptom duration ranged from one month to 30 years (mean = 3.6 years +/- 5.3 years). No relationship was found between diagnosis, age or gender on symptom length.

Response times for initial contact, (ie time from receipt of referral to first appointment) ranged from five days to 16 weeks (mean = 8.71 +/- 3.34 weeks).

Forty four patients (92%) attended the initial group session. Of the non-attenders, two attended subsequent groups and were therefore included in the data analysis while two failed to attend a further appointment and were subsequently discharged. These two were not included in further data analysis (n=46).

Thirty two patients (69.6%) attended at least one follow up appointment. One patient (2.2%) was discharged after the group, two (4.3%) declined follow up and were therefore discharged (symptoms resolved). For five patients (10.9%) follow up appointments were not appropriate (eg symptoms resolved or none of the exercises reproducing symptoms). Eight patients (17.4%) failed to attend their follow ups. Of the non-attenders, reasons included: childbirth, illness, prior commitments, resolution of symptoms, no reason (DNA).

SUMMARY TABLE			
Number of follow ups	Number of patients	Percentage of total patients	Total therapy time (minutes)
0	13	28.3	0
1	4	8.7	120
2	4	8.7	240
3	6	13.0	540
4	5	10.9	600
5	7	15.2	1050
6	3	6.5	540
7	0	0	0
8	0	0	0
9	2	4.4	540
10	1	2.2	300
11	1	2.2	330
12	0	0	0
13	0	0	0
14	0	0	0
15	1	2.2	450
Total therapy time =			4710

Figure 2

Number of follow up appointments ranged between 1 and 15 (mean 3.34 +/- 3.36). Given that each follow up session was 30 minutes long it is possible to calculate total therapy time in minutes per patient. Total therapy time of all follow ups (30 minute group session not included) equals 4710 minutes or 78.5 hours of therapy time. See summary table (Figure 2):

On observation, there did not appear to be a relationship between symptom length, age, diagnosis or referral source in terms of number of treatments and outcome measures.

Twenty eight patients (60.8%) did not receive the Hallpike/Epley manoeuvre. Of this group, two patients were referred with BPPV and 22 with vestibular disorder. (Please note that 'Vestibular Disorder' is an umbrella term which may include BPPV). Of the remaining four, diagnoses were right sided tinnitus, vertigo, hyperacusis and no diagnosis given. These patients would not have been appropriate for the manoeuvre.

Of the remaining 18 patients who did receive the Hallpike/Epley manoeuvre, nine patients (50% (n=18)) received one assessment Hallpike/Epley manoeuvre (seven referred with vestibular disorder and one with BPPV). Two patients (11.1%) received two (one, BPPV, one Right ocular melanoma), two (11.1%) received three (one BPPV, one vestibular disorder), one (5.5%) received six (no diagnosis on referral card), two (11.1%) received seven (two vestibular disorder) and two (11.1%) received eight (one vestibular disorder, one dizziness). The Hallpike/Epley manoeuvre was performed at the discretion of the treating physiotherapist. Given that the manoeuvre is proposed for treatment of BPPV, it is generally thought that the manoeuvre was performed appropriately for the majority of patients. However there is a large group for whom the manoeuvre was not performed but who may in fact have derived benefit from the manoeuvre.

Total number of exercises performed by the patient ranged from 0-541 (mean 97 +/- 118.4). The number of exercises performed showed no relationship with gender, age, length of symptoms or diagnosis. No clear relationship was found between number of exercises performed over the treatment period and speed of recovery.

**VAS**

Fourteen patients demonstrated no change in VAS score. Eleven of these were discharged after the initial group session and would therefore only have one VAS score. Of the remaining three patients who continued treatment, one was referred to behavioural psychology as none of the exercises reproduced symptoms. The remaining two patients were aged 83 and 73 years with symptom length of 15 and 30 years respectively. The

patient with a 30 year symptom history had mild symptoms (VAS 1). The other patient had unchanging VAS of 10 and was referred back to the consultant. Of the group labelled n/a on the graph, these patients failed to complete the VAS, some were not asked to and others did not understand the task due to poor English (see Figure 3).

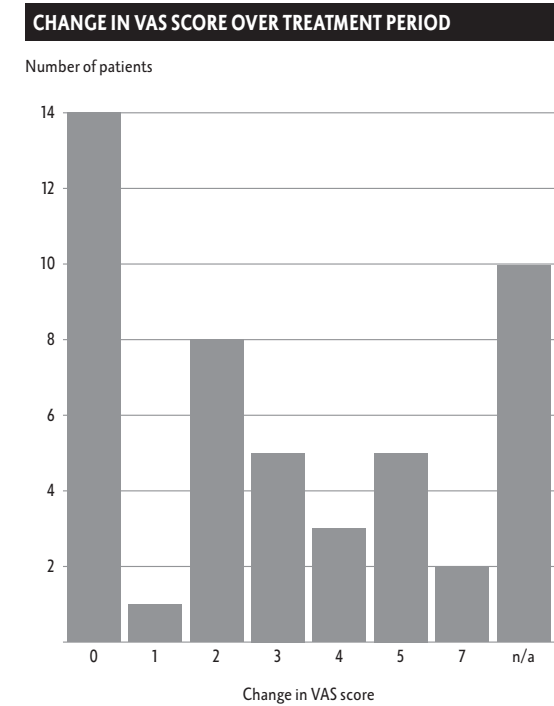


Figure 3

**DHI**

Nineteen patients (41.3%) achieved a statistically significant change in questionnaire score of more than 18 (Jacobson and Newman 1990). Four patients did not complete the questionnaire. Sixteen patients (34.7%) demonstrated no change in questionnaire score. This includes the group that were discharged after the initial group session (twelve patients) and therefore would only have one DHI score. Of the remaining four patients, one was referred from ENT and three from Audiology. Symptom length ranged from seven months to 15 years, diagnosis was three with vestibular disorder, one with vertigo and DHI scores on discharge were 26, 66, 68 and 92. One patient was referred back to the consultant, another was non compliant with treatment. The remaining two were discharged with advice on continuing symptom management. Three patients demonstrated a change of 1-4 points, five patients, 8-12 points and one patient, 12-16 points. Perceived symptom severity did not appear to influence rate of recovery.

**STATISTICAL ANALYSIS**

**Change in VAS and DHI score between the before and after measurements (ie initial and final sessions)**

Wilcoxon matched pairs analysis showed a highly significant change in values of both VAS and DHI from before the physiotherapy programme to after (p < 0.001 for both). However the change in DHI score did not reach the level of clinical significance (18) (Jacobson and Newman 1990). Although some positive change in patients' health status has occurred, this is not in clinically relevant terms for all patients.

**The correlation between the before and after measurements**

Spearman's rank correlation coefficient scores showed a highly significant positive correlation between the before and after measurements of both scores (p = 0.001 for both) which agrees with the above analysis. Increases in VAS score corresponded with increases in DHI score. This increases confidence in the validity of the VAS when compared to the validated DHI.

**Influence of the other variables upon the change in the VAS score**

Gender, age and symptom length did not affect VAS score significantly. However the number of individual sessions, the number of exercises performed and receiving the Hallpike/Epley manoeuvre did affect VAS score significantly (p < 0.001, p < 0.001 and p = 0.007 respectively).

To summarise:

- Change in VAS score does not appear to be influenced by gender, age and length of symptoms.
- VAS scores do appear to be influenced by the number of sessions, the number of exercises performed and the presence of Hallpike/Epley manoeuvres.
- Patients attending four or more sessions had a median change of three, compared to zero for those with less sessions. The effect for Hallpike/Epley manoeuvres was of similar size with those subjects undergoing the manoeuvre having a larger change in VAS score.

**Influence of the other study variables upon the change in the DHI score**

Similar analyses were performed to examine the change in the DHI scores. Again, gender, age and symptom length did not affect DHI scores significantly. However number of individual sessions, number of exercises performed and receiving the Hallpike/Epley manoeuvre did affect DHI scores significantly (p < 0.001, p < 0.001 and p = 0.002 respectively).

To summarise:

- As with the VAS scale, DHI score does not appear to



be influenced by gender, age and length of symptoms.

- Similar to VAS, number of sessions and the presence of the Hallpike/Epley manoeuvre do influence the DHI scores.
- Patients receiving four or more sessions had a median change in DHI score of 25 (which is also clinically significant), compared to zero for those with less sessions. A similar sized effect was shown for Hallpike/Epley manoeuvres with those subjects undergoing manoeuvres having a larger change.
- As with the VAS results a highly significant positive correlation between change in the DHI score and the number of exercises performed ( $p < 0.001$ ) was demonstrated, but no evidence of a correlation with age was shown.

### IMPORTANT FINDINGS

Many more females than males participated in the programme. The reason for this is unclear and would be an interesting area for further study (for example age related or hormonal influences).

Many patients waited eight weeks for an initial appointment, however this did not appear to influence outcomes. Once in the system, most patients were followed up within 1-2 weeks of their initial appointment.

It is evident that vestibular rehabilitation demands significant physiotherapy time due to the numbers of patients referred to the service requiring, in some cases extensive follow up after the initial group session. This was identified as an area for possible service development, for example telephone follow up rather than attending numerous appointments. However increased numbers of appointments leads to more successful outcomes as seen by the measures used in this study. Highly significant changes in both of the two scores (VAS and DHI) were demonstrated between the before and after measurements. These particular outcome measures suggest that the programme is having a positive effect on patients in statistical terms. Median DHI score changes did not reach a level of clinical significance (Jacobson and Newman 1990), suggesting that the programme needs further development in this regard.

Outcomes did not appear to be influenced by possible confounding variables such as age, gender and length of symptoms. This enhances the validity of the findings of the programme itself (ie the number of individual sessions, the number of exercises performed and the application of the Hallpike/Epley manoeuvre as appropriate). Outcomes appeared to be influenced positively by activities related to the programme, such as the number of individual sessions, the application of the Hallpike/Epley manoeuvre and the number of exercises

performed. The more these activities occurred, the more likely the patient would show positive change in VAS and DHI scores. Clinically significant change in DHI scores was found in these cases.

Not all patients received the Hallpike/Epley manoeuvre even though some may have derived benefit from this treatment. This was identified as a key training issue for the physiotherapists.

DHI and VAS do appear to be appropriate outcome measures. Although they are subjective, they do assess the outcomes of interest in this audit. However more outcome measures are required to truly test the impact of the programme (eg patient satisfaction questionnaire, interviews with staff, more clinical observations). A limitation of the DHI is that sentence structure is important to achieve accurate response. It may therefore be less reliable for the non English speaking population. It is important to note that VAS scores did correlate with DHI scores in this study, reflecting the subjectivity of both these outcome measures but enhancing the validity of the VAS in relationship to the validated DHI.

To conclude, it appears that the majority of patients did benefit from the physiotherapy intervention. Further suggestions to improve the programme are listed below:

1. Further staff training and development in vestibular rehabilitation, in particular indications for the use of the Hallpike/Epley manoeuvre.
2. Further analysis and development of suitable outcome measures.
3. Reducing waiting time for an initial appointment to 4-6 weeks from receipt of referral (although this may or may not affect outcome).
4. Ensuring patients continue to receive their initial follow up within 1-2 weeks from their initial group session to maximise carry over and teaching benefits from the initial group session.
5. Further provision of information to referral sources about our service and the types of patients that are appropriate to refer to the service.
6. Further research to clarify other key areas such as optimal number of exercises and progression of exercises for patients.
7. Further follow up of the group that fail to attend their initial appointments (and are therefore not included in this audit).
8. Long term follow up of patients eg six months, twelve months and two years post discharge from the service.
9. Larger sample sizes required to test the programme further.
10. Use of a comparator (eg a group who did not receive the programme) would have enhanced the validity of this audit and would be useful to improve the validity of further studies.

### ACKNOWLEDGEMENTS

I would like to thank Christine Paice for her help with project set up and use of the Exel database. I would like to thank Justin Gore and P Bassett for their help with final statistical analysis.

### REFERENCES

- Cawthorne T (1944) *The physiological basis for head exercises* Physiotherapy 30, 106-107.
- Cooksey F S (1946) *Rehabilitation in vestibular patients* Proc R Soc Med 39, 273.
- Dix R and Hallpike C S (1952) *The pathology, symptomology and diagnosis of certain common disorders of the vestibular system* Proc R Soc Med 45, 341-354.
- Epley J M (1992) *The canalith positioning procedure for the treatment of BPPV* Insights in Otolaryngology 9, 1-8.
- Jacobson G P and Newman C W (1990) *The development of the dizziness handicap inventory* Archives of Otolaryngology, Head and Neck Surgery 116, 242-247.

## Articles in other journals

### ■ ACTA NEUROLOGICA SCANDINAVICA

#### Vol 108, No 6

• Janssens A et al, *Impact of recently diagnosed multiple sclerosis on quality of life, anxiety, depression and distress of patients and partners* pp389-395.

### ■ AMERICAN JOURNAL OF PHYSICAL MEDICINE & REHABILITATION

#### Vol 82, No 8

• Butz M, *Longitudinal effects of NPPV in patients with amyotrophic lateral sclerosis* pp 597-604.

• Stein J et al, *Patient knowledge and expectations for functional recovery after stroke* pp 591 –596.

#### Vol 82, No 10 (supplement)

• Good D, *Stroke: Promising neurorehabilitation interventions* pp S50-S57.

• McDonald J, Becker D, *Spinal cord injury: Promising interventions and realistic goals* pp538-549.

#### Vol 82, No 11

• Armagan O et al, *Electromyographic biofeedback in the treatment of the hemiplegic hand* pp856-861.

• Metaki N, *Muscular atrophy in the hemiplegic thigh in patients after stroke* pp862-865.

#### Vol 82, No 12

• Chen C-L et al, *Gait performance with compensatory adaptations in stroke* pp925-935.

#### Vol 83, No 1

• Cheng P-T et al, *Leg muscle activation patterns of sit to stand movement in stroke patients* pp10-16.

### ■ ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION

#### Vol 84, No 8

• Corna S et al, *Comparison of Cawthorne-Cooksey exercises and sinusoidal support surface translations to improve balance in patients with unilateral vestibular deficit* pp1173-1184.

• Dodd K, Morris M *Lateral pelvic displacement during gait: abnormalities after Stroke and changes during the first month of rehabilitation* pp1200-1205.

• Francisco G, Boake C *Improvements in walking speed in poststroke spastic hemiplegia after intrathecal baclofen therapy: a preliminary study* pp1194-1199.

• Hirsch M et al, *The effects of balance training and high-intensity resistance training on persons with idiopathic parkinson's disease* pp1109-1117.

• Hsu A, Tang P, Jan M *Analysis of impairments influencing gait velocity and asymmetry of hemiplegic patients after mild to moderate Stroke* pp1185-1193.

• McColl M et al, *Ageing, spinal cord injury and quality of life: structural relationships* pp1137-1144.

#### Vol 84, No 9

• Chen C, et al, *The relationship between sitting stability and functional performance in patients with paraplegia* pp1276-1281.

• Dobrovolny C et al, *Reliability of treadmill exercise testing in older patients with chronic hemiparetic Stroke* pp1308-1312.

• Hendricks H et al, *Motor evoked potentials of the lower extremity in predicting motor recovery and ambulation after Stroke: a cohort study* pp1373-1379.

• Koo T et al, *Joint position dependence of weakness during maximum isometric voluntary contractions in subjects with hemiparesis* pp1380-1386.

• Sakakima H, Yoshida Y *Effects of short duration static stretching on the denervated and reinnervated soleus muscle morphology in the rat* pp1339-1342.

#### Vol 84, No 10

• Ada L et al, *A treadmill and over-ground walking program improves walking in persons residing in the community after Stroke: a placebo-controlled, randomized trial* pp1486-1491.

• Barbeau H, Visintin M *Optimal outcomes obtained with body-weight support combined with treadmill training in Stroke subjects* pp1458-1465.

• Moreland J et al, *Progressive Resistance Strengthening Exercises After Stroke: A Single-Blind Randomized Controlled Trial* pp1433-1440.

• Wrisley D et al, *Reliability of the dynamic gait index in people with vestibular disorders* pp1528-1533.

#### Vol 84, No 11

• Agarwal V et al, *A model to aid in the prediction of discharge location for Stroke rehabilitation patients* pp1703-1709.

• De Groot M, Phillips S, Eskes G *Fatigue associated with Stroke and other neurologic conditions: implications for stroke rehabilitation* pp1714-1720.

• Katz-Leurer M et al, *The influence of early aerobic training on the functional capacity in patients with cerebrovascular accident at the subacute stage* pp1609-1614.

• Nair K, Wade D *Satisfaction of members of interdisciplinary rehabilitation teams with goal planning meetings* pp1710-1713.

• Visser M et al, *Clinical tests for the evaluation of postural instability in patients with Parkinson's Disease* pp1669-1674.

• Yagura H et al, *Benefit of inpatient multidisciplinary rehabilitation up to one year after Stroke* pp1687-1691.

#### Vol 84, No 12

• Bush B et al, *Validation of a model for evaluating outcome after traumatic brain injury* pp1803-1807.

• Garland S et al, *Recovery of standing balance and functional mobility after Stroke* pp1753-1759.

• Lo S et al, *Arthrographic and clinical findings in patients with hemiplegic shoulder pain* pp1786-1791.

• Pohl M et al, *Immediate effects of speed-dependent treadmill training on gait parameters in early Parkinson's Disease* pp1760-1766.

• Teixeira da Cunha-Filho I et al, *Differential responses to measures of gait performance among healthy and neurologically impaired individuals* pp1774-1779.

• Toro B, Nester C, Farren P *The status of gait assessment among physiotherapists in the United Kingdom* pp1878-1884.

### ■ AUSTRALIAN OCCUPATIONAL THERAPY JOURNAL

#### Vol 50, No 2

• McCluskey A *Occupational therapists report a low level of knowledge, skill and involvement in evidence-based practice* pp3-12.

#### Vol 50, No 4

• Bennett S et al, *Perceptions of evidence-based practice: A survey of*

*Australian occupational therapists* pp13-22.

• Gustafsson L, McKenna K *Treatment approaches for clients with a stroke-affected upper limb; Are we following evidence-based practice?* pp205-215.

• Hoffmann T et al, *Outcomes after stroke: basic and instrumental activities of daily living, community reintegration and generic health status* pp225-233.

### ■ AGE AND AGEING

#### Vol 32, No 2

• Rodgers H et al, *British Association of Stroke physicians: benchmarking survey of stroke services* pp211-217.

### ■ AUSTRALIAN JOURNAL OF PHYSIOTHERAPY

#### Volume 49

• Harvey L et al, *Randomised trial of the effects of four weeks of daily stretch on extensibility of hamstring muscles in people with spinal cord injuries* pp176-181.

### ■ BRAIN INJURY

#### Vol 17, No 8

• Bach-y-Rita P, *Theoretical basis for brain plasticity after TBI* pp643-652.

• Page S, Levine P, *Forced use after TBI: promoting plasticity and function through practice* pp675-684.

#### Vol 17, No 9

• Au-Yeung S, *Does weight-shifting exercise improve postural symmetry in sitting in people with hemiplegia?* pp789-798.

### ■ CLINICAL EFFECTIVENESS IN NURSING.

#### Volume 7

• Burton C *Therapeutic nursing in Stroke rehabilitation: a systematic review* pp124-133.

• Forster A, Young J *Bradford elderly care and rehabilitation research department: research related to the national service framework for older people* pp115-123.

### ■ CLINICAL REHABILITATION

#### Vol 17, No 5

• Churchill A et al, *Relative contribution of footwear to the efficacy of ankle-foot orthosis.*

• Dawes H et al, *The effect of increasing effort on movement economy during incremental cycling exercise in individuals early after acquired brain injury* pp535-539.

• Meijer, R et al, *Prognostic factors in the subacute phase after Stroke for the future residence after six months to one year. A systematic review of the literature* pp512-520.

• Simondson JA et al, *The mobility scale for acute Stroke patients: concurrent validity* pp553-557.

#### Vol 17, No 6

• Fang Y, *A study on additional early physiotherapy after Stroke and factors affecting functional recovery* pp608-617.

• Rodgers H et al, *Does an early increased-intensity interdisciplinary upper limb therapy programme following acute Stroke improve outcome?* pp579-589.

#### Vol 17, No 7

• Katz-Leurer M, *The effect of early aerobic training on independence six months post Stroke* pp735-741.

• Langhammer B, Stangelle J, Bobath or motor relearning programme? A follow-up one and four years post Stroke pp731-734.

• Van Loo M, *Inter-rater reliability and concurrent validity of walking speed measurement after traumatic brain injury* pp775-779.

• Woldag H et al, *Is the repetitive training of complex hand and arm movements beneficial for motor recovery in Stroke patients?* pp723-730.

#### Vol 17, No 8

• Lannin N, Herbert R, *Is hand splinting effective for adults following Stroke? A systematic review and methodological critique of published research* pp807-816.

#### Vol 18, No 1

• Morris SL et al, *Outcomes of progressive resistance strength training following Stroke: a systematic review* pp27-39.

• Siegert RJ et al, *Constraint-induced movement therapy: time for a little restraint?* pp110-114.

• Topuz O et al, *Efficacy for vestibular rehabilitation on chronic unilateral vestibular dysfunction* pp76-83.

### ■ INTERNATIONAL JOURNAL OF THERAPY AND REHABILITATION.

#### Vol 10, No 9

• Cowdell F, Garrett D, *Recreation in Stroke rehabilitation part one: a review of the literature* pp408-411.

• Lincoln N et al, *Treatment of cognitive problems for people with multiple sclerosis* pp412-416.

#### Vol 10, No 10

• Cowdell F, Garrett D, *Recreation in stroke rehabilitation part two: exploring patients' views* pp456-462.

• Farley R et al, *What is the evidence for the effectiveness of postural management?* pp449-455.

• Petrofsky J et al, *Towards an objective method of gait analysis* pp463-472.

### ■ JOURNAL OF NEUROLOGY NEUROSURGERY AND PSYCHIATRY.

#### Vol 74, No 11

• Cauraugh J, Kim S, *Stroke motor recovery: active neuromuscular stimulation and repetitive practice schedules* pp1562-1566.

• Gemmet A, Adler C, Stelmah G, *Parkinson's Disease patients undershoot target size in handwriting and similar tasks* pp1502-1508.

#### Vol 75, No 2

McGuigan C, Hutchinson, *The multiple sclerosis impact scale (MSIS-29) is a reliable and sensitive measure* pp266-269.

### ■ JOURNAL OF THE AMERICAN GERIATRICS SOCIETY

#### Vol 51, No 11

• Allen K et al, *Developing a Stroke unit using the acute care for elders intervention and model of care* pp1660-1667.

### ■ MULTIPLE SCLEROSIS CLINICAL AND LABORATORY RESEARCH

#### Vol 9, No 5

• Achiron A, *Longitudinal disability curves for predicting the course of relapsing-remitting multiple sclerosis* pp486-491.

• Porter B, *Diagnosis of MS: a comparison of three different clinical settings* pp431-439.

### ■ PHYSICAL THERAPY

#### Vol 83, No 8

• Morris M, Dunai J, *Assessment of unilateral neglect* pp732-740.

#### Vol 83, No 11

Boyd L & Winstein C, *Impact of explicit information on implicit motor-sequence learning following middle cerebral artery Stroke* pp 976-982.

#### Vol 83, No 12

• Karnath H-O, Broetz D, *Understanding and treating 'pusher syndrome'* pp1119-1125.

### ■ PHYSICAL THERAPY REVIEWS

#### Vol 8, No 3

• Plummer A, *Constraint-induced therapy and the motor learning literature that underpins its application* pp143-149.



• Quinn R, Cramp F, *The efficacy of electrotherapy for bell's palsy: a systematic review* pp151-164.

#### ■ PHYSIOTHERAPY RESEARCH INTERNATIONAL

Vol 8, No 4

• Bulley P, *The podiatron: an adjunct to physiotherapy treatment for Guillain-Barré syndrome* pp210-215.

• Gale J, *Physiotherapy intervention in two people with HIV or AIDS-related peripheral neuropathy* pp200-209.

• Whitney S et al, *Concurrent validity of the Berg Balance Scale and the Dynamic Gait Index in people with vestibular dysfunction* pp178-186.

#### ■ STROKE

Vol 35, No 1

• Donnelly M et al, *Randomized controlled trial of an early discharge rehabilitation service: The Belfast Community Stroke Trial* pp127-133.

• Patel A et al, *Alternative strategies for Stroke care. Cost-effectiveness and cost-utility analyses from a prospective randomized controlled trial* pp196-204.

Vol 35, No 11

• Fjaertoft H, Indredavik B, Lydersen S, *Stroke unit care combined with early supported discharge. long-term follow-up of a randomized controlled trial*

pp2687-2692.

#### ■ THE AMERICAN JOURNAL OF OCCUPATIONAL THERAPY

Vol. 57, No 2

• Gillot A et al, *Perceptions and experiences of two survivors of Stroke who participated in constraint-induced movement therapy home programs* pp168-177.

Vol 57, No 4

• Mathiowetz V, *Test-Retest reliability and convergent validity of the fatigue impact scale for persons with multiple sclerosis* pp389-395.

#### ■ THE LANCET

Vol 362, No 9,395

• Zajicek J et al, *Cannabinoids for treatment of spasticity and other symptoms related to multiple sclerosis (CAMS study)* pp1517-1527.

Vol 363, No 9,406

Outpatient Service Trialists, *Rehabilitation therapy services for Stroke patients living at home* pp352-356.

#### ■ THE BRITISH JOURNAL OF OCCUPATIONAL THERAPY

Vol 66, No 10

• Conneeley A, *Quality of life and traumatic brain injury: a one-year longitudinal qualitative study* pp440-446.

Vol 66, No 11

• Dawson J, Thornton H, *Can patients with unilateral neglect following Stroke drive electrically powered wheelchairs?* pp496-504.

## Injection Therapy for Neurological Physiotherapists

This new Masters level module is designed to be either a stand-alone module or an option module for physiotherapists accessing the MSc physiotherapy programme.

#### The module aims:

- To introduce the theory and practice of botulinum toxin injection therapy within the extended scope of practice of physiotherapists.
- To develop the ability to clinically reason and integrate the use of botulinum as part of the management of patients presenting with neurological dysfunction.

#### The module consists of two distinct components:

- An initial term of university based sessions will provide the theoretical underpinning to injection therapy.
- This is followed by a period of mentored practice, in the students' own clinical environment, to facilitate the application of theory to practice.

The module is aimed at physiotherapists with evidence of continuing professional development within the field of neurological rehabilitation, through work experience or postgraduate courses.

Students must be able to identify an appropriate mentor, with experience of injection therapy, prior to starting the module.

#### For further details:

Telephone 024 7679 5958/5959 or e-mail: [j.sellars@coventry.ac.uk](mailto:j.sellars@coventry.ac.uk)

Higher Education for all

Ref: HSS 20/03



COVENTRY  
UNIVERSITY

## FOCUS ON Sandra Stark

one of the first physiotherapists in the UK to inject botulinum talks about her training and her role

#### What is your exact title?

Professional Lead Physiotherapist, Hunters Moor Regional Rehabilitation Centre, Newcastle upon Tyne (HMRC).

#### Why did you decide you wanted to inject botulinum?

Because I work in the spasticity clinics held here at HMRC and advise the medics where the botulinum would be best injected as well as undertaking pre and post injection assessments and treatment. It seemed logical to take the next step and learn to inject in order to offer a more efficient service for our clients. I also wanted to develop the service further and offer an outreach service into the community.

#### Who trained you?

Professor M. Barnes, Consultant in Neurorehabilitation here at HMRC.

#### What standards were you required to meet?

I was required to keep a comprehensive portfolio, which included a detailed record of all the injections I administered, which muscle group, what dosage, outcome etc. I also had to produce a written account of the indications and contra-indications for botulinum. This was fulfilled when I published a paper on the management of spasticity entitled 'The use of Botulinum and Physiotherapy in Spasticity Management' in *The British Journal of Therapy & Rehabilitation* (2001 Oct; 8(10): 386-92). I have also lectured on spasticity management courses on the use of botulinum. I wrote the standards for the spasticity clinic, and designed and audited our clinic assessment sheets.

#### Who imposed these standards?

Training was agreed between Professor Barnes and myself and was based on the competencies which the nurses, who inject for dystonia, had to achieve.

#### From whom did you get 'permission' to do both the training and the injecting?

From three sources (in no particular order):

- The CSP provided a letter saying they supported this as an extension of practice.
- The Chief Executive of the Trust gave his written consent, in order to satisfy the Trust's Insurers.
- A 'Patient Group Directive' was completed, which is sanctioned by the Drugs and Therapeutics Committee.

#### How did you know you had completed your training?

Initially each injection I did was closely supervised. I was observed drawing up the drug as well as injecting. As I grew more confident I needed less direct supervision but had someone I could call upon at

all times. I 'finished' my training when I felt confident handling and administering the drug and my supervisor felt I was competent. Training is an on-going issue and we are setting up regular peer supervision sessions for physiotherapists who inject.

#### How do you keep updated?

From the literature and from frequent use of the drug itself as well as study days and conferences. I keep a record of my professional development, as all physiotherapists should. Within HMRC we have also set up supervision sessions every six weeks specifically for the outreach service. A national workshop was held recently at the CSP, attended by physiotherapists interested in spasticity management and who were injectors. We covered key areas such as education and training and standards of practice. I expect this will be written up in *Frontline* soon.

#### What about prescribing?

No I cannot prescribe. Any patient I see in the clinic and feel is appropriate to receive botulinum, must be seen by a consultant first – they will prescribe the botulinum. I can then administer the botulinum within certain pre-set limits of his prescription and as the patient's condition demands.

#### Are there any limitations as to what you can inject and when?

I cannot inject new patients if not seen by a consultant first. My PGD sets limits around the length of time between injections, total dose and the amount by which it can be increased. I can inject Toxin A and B.

#### In your opinion, how does this advance our role/the profession?

Physiotherapists should be involved in all aspects of the management of spasticity. Clinics where botulinum is given without strategies for the comprehensive management of the patient are ineffective at best. Botulinum requires post injection Physiotherapy management strategies to maximise its effectiveness in terms of regaining lost range and improving motor control and function. It makes perfect sense that the clinician who administers the drug should be aware of or responsible for, that follow up, in order that the best outcome is achieved for the patient. I strongly feel that only physiotherapists in a situation where they have that long-term responsibility to the patient, should inject. Botulinum Toxin injections should be viewed as part of the 'tool kit' in spasticity management. Expertise and extensive knowledge of spasticity management must be developed prior to extending the physiotherapist's role to inject. The skill lies in the correct assessment of the patient and understanding of the patient's goals. The technical skill of injecting can be learned by any health professional. I therefore feel that physiotherapists who start injection training should be extending their role in spasticity management, not simply as botulinum injectors.

# ACPIN news

## ACPIN AGM 2004

### MINUTES

Meeting opened at 12.26pm

#### 1. Apologies

Alex Morley

Sue Edwards

#### 2. Minutes 2003

Accepted as correct. Proposed by Anthea Dendy, seconded by Rosie Hitchcock.

#### 3. President's report

#### 4. Chair's report

#### 5. Treasurer's report

#### 6. Election of officers

Emma Forbes voted in as PRO, and Louise Rogerson voted in as Honorary Minutes Secretary

The rest of the Executive Committee stands as such:

- Nicola Hancock – *Chair* (to be confirmed at May meeting)
- Jackie Sharp – *Vice Chair* (to be confirmed at May meeting) and *Honorary Treasurer*
- Cherry Kilbride – *Honorary Secretary*
- Mary Cramp – *Honorary Research Officer*
- Jo Tuckey – *Honorary Membership Secretary*
- Louise Gilbert – *CIG Liaison Rep.*
- Louise Dunthorne – *Synapse Co-ordinator*
- Anne McDonnell – *Committee Member*
- Jo Kileff – *Committee Member*
- Ros Cox – *Committee Member*
- Alison Bailey-Hallam – *Committee Member*

#### 7. Constitution

The amended version, dated 20th March 2004 was formally ratified.

#### 8. AOB

Flowers presented as a thank you to Linzie Bassett for her work and commitment over the last seven years as Chair of ACPIN.

Meeting closed – 12.58pm.

## PRESIDENTS ADDRESS

Ray Tallis FRCP, DLitt, Litt D, FMedSci

Ladies and Gentlemen,

I cannot believe that two years have passed since Sue Edwards kindly handed over the Presidency to me, here at Northampton. One of the things that has struck me since I had my (recent) 21st birthday is that inflation affects time just as much as it affects money. Anyway, the passage of the weeks accelerates and I can't believe that a hundred of them have gone by. It can only mean one thing: I have been having a great time as President. So thank you for that!

I would like to share one or two impressions with you from my two years in office. The first relates to the efficiency of ACPIN. You have a huge brief, covering professional matters, the Congress, new developments in science, professional standards, and issues relating to the running of the organisation itself and yet you manage to encompass them very effectively and with the minimum of fuss. This is brought home to me every time I attend an ACPIN business meeting in which a wide variety of matters are despatched effectively and efficiently. As an outsider I am in a position to see this. What is more, I can make comparisons. Certain medical organisations – not to speak of the Department of Health – could learn a lot by sitting in on a few ACPIN Executive meetings! This is particularly impressive because I know that you do all this work for ACPIN on top of at least two other roles: holding down jobs in which the pressures are mounting daily and looking after your families. What is more, you have little or no secretarial or administrative support. Indeed, you are your own administrative and secretarial support. It means that you have to rely very much on each other

and I have also noticed how, when an ACPIN officer says she will do something, she means it: she does it.

One of the most impressive outputs of ACPIN is, of course, *Synapse*. Over the last few years it has gone from strength to strength, getting more and more substantive both in terms of size and scientific content, as well as looking very good. When one sees an average issue, it is very difficult to believe that it is produced in people's spare time. I know how much goes into producing a journal of high quality because for many years I edited *Reviews in Clinical Gerontology* and I had a lot of support from Cambridge University Press who did all the donkey work and I still found it a strain. A real pain is when you have contributors, like a certain bearded professor who promises an article by a certain date and then delivers it months after the deadline. (Sorry Louise!)

Another area in which I am aware of the tremendous amount of work behind the scenes is in education. I am thinking particularly of the National ACPIN Study Days, like today which has been of a very high standard. No wonder you are oversubscribed, with a waiting list, despite accommodating over 200 delegates. Again, as a survivor of conference organising, I know just how much hard work conferences involve and how easy it is for things to go wrong, without meticulous, indeed obsessional attention to detail. The same high standard of organisation has been evident in ACPIN's contributions to the Annual Congress. I know that I am biased but my view that our Special Interest Group puts on the best show is confirmed by the capacity crowds that come and the buzz they create. (Our offer of free booze had nothing to do with it by the way.) I am sorry that we are having a year off in 2004, though I bet the hard-pressed secretariat is not. Anyway, this October you can actually enjoy Congress and concentrate on

professional development in the daytime and behaving badly in the evening.

The other week, courtesy of your efficient team, I received my membership renewal – the best £25's worth since I bought 2,500 penny gobstoppers in a sweetshop in 1959. My number, by the way is 3169, but my friends call me 69. Along with my membership card, I received the leaflet succinctly summarising your aims: supporting clinical practice and research; encouraging education and communication networks and organising events – all converging in the over-riding aim to enhance practice. It will be obvious from what I have said that I believe that ACPIN has delivered handsomely on all of these things.

I can say all these nice things because I am an ectopic medic who can take no credit for the work you have done. Anyway, it has all made me rather introspective about whether I myself have delivered on the various things that I referred to when I was honoured with my present post. I looked at my promises in my speech in 2002 and I give myself 3 out of 10. I said I would try to be of use in several areas: helping to promote efforts to strengthen the science base of neurorehabilitation, including neurophysiotherapy; fighting the good fight against the increasing political interference and ever closer regulation of clinical practice; helping to think about ways in which mental and physical aspects of neuro-rehabilitation could be brought closer; encouraging more interaction between special interest groups in areas of common interest and contributing to thought about the conceptual framework of neurorehabilitation. I don't know how useful I have been in any of these areas. Anyway, here is my self-report.

Regarding the science-base of neuro-rehabilitation, many of you will be aware of the work we have been doing at the Academy of

Medical Sciences thinking about ways in which the gap between basic neuroscience and clinical practice might be narrowed. The Report – *Restoring Neurological Function: Putting the Neurosciences to Work in Neurorehabilitation* is discussed in an article in this issue of *Synapse* – the article I kept Louise waiting for. I hope you find it helpful. I do believe that, if this report hits the spot with those who control science policy, there will be a very significant increase in funding for what is called 'translational research' – using basic science to develop new treatments that will benefit patients – in neurorehabilitation. Our report envisaged a key role for therapists in bringing about the new future and flagged up the lack of research opportunities and career pathways. This has been listened to very sympathetically by many people who have a key role in science policy including Lord Sainsbury the Minister for Science. The announcement by Gordon Brown in the Budget of 100 million pounds for translational research into areas where there is a huge burden of suffering and the reference to the Transitional Cancer Research Networks (which very much reflect our way of thinking in the Report) is very exciting. If things go the way I hope they will, in a decade neurophysiotherapists will not only participate much more in major research programmes in this area but will be leading them. I was particularly pleased at the very positive response our Report received both from the CSP and ACPIN during the consultation phase.

As for the second area – fighting the good fight against defining all our professional roles ever more narrowly and in terms of government targets, I don't know how useful I have been. Some of you may have seen my howl of rage in the last issue of *Synapse*. In September this year, I have a much longer and louder howl of rage being published by Atlantic Books – *Hippocratic Oaths: Medicine, the NHS*

and its Discontents – which you might find amusing. I shall probably have to leave the country shortly afterwards. I do think we are all in danger of being reduced to sessional functionaries responding to managerial and political masters if we don't fight back. Professions should not only deal with the needs of the profession but also, particularly in an area such as neurorehabilitation, be the midwives of a better future.

I am even less sure how much I have contributed to the third area in my Presidential prospectus – thinking about the relationship between body and mind in neurorehabilitation. In part this is because I have become increasingly puzzled by this – despite, or perhaps because, I have published a lot in this area. One or two of the very long things I have written may give people the notion that I am undertaking a pilgrimage up my own sacrificial orifice! Much more useful have been some of the ideas that Val Pomeroy has been developing, and with which I have been involved, in looking at the potential role of mirror neurones and mental activity in rehabilitation.

This links with the fourth area where I had hoped to be of use; namely supporting the ongoing initiatives that you have of promoting closer relationships between ACPIN and other special interest groups, especially Mental Health and AGILE. I think you are all managing very nicely in relation to AGILE and don't require my input at all. The joint fringe meeting at last year's Congress was proof of that. There is, however, it seems to me (as an outsider) another important link: between physiotherapists interested in neurology and those interested in clients with mental health problems. This is where examining concepts might be of particular use. If there were any takers for a joint meeting with the mental health physios along the lines of 'mind and body' in neurological recovery or the 'interaction between mind and body'



Ray Tallis, ACPIN President, gives his address during the ACPIN AGM in Northampton.

in the development and treatment of symptoms, I would be very interested in being of use. I think it is time that all of us clinicians – especially doctors – had a revolution in our thinking about the apparent barrier between mind and body.

And this links to the fifth area in my prospectus: that of contributing to thought about the 'conceptual framework' of physical therapies. It would be generous to award me 1 out of 10 for my assistance in that area! I think there are some serious and interesting questions to be asked and I know many of you are asking them. I gave a rather disastrous talk on this to AGILE a couple of years ago, when I discussed the mystery of gait; in particular the problem of trying to understand the interaction between 'bespoke' voluntary activity and the stereotyped, 'off-the-peg' mechanisms which the former depends upon. I think this connects with the debate about the balance between 'top down' and 'bottom up' approaches to rehabilitation. Another area for a meeting or workshop at sometime in the future, perhaps. Count me in for input on this one!

When Linzie first asked me to speak at the Annual Meeting, she made it very clear that I was to speak for no more than ten minutes. When Linzie speaks others obey, so I shall bring my Presidential address to a halt but not before I have said one or two things about Linzie herself. All of the nice things I said at the beginning of my talk about the ACPIN officers apply in spades to Linzie. I think she is

one of the most remarkable people I have ever met. Everyone knows the title of Alison Pearson's novel, *I don't know how she does it*, well it applies to Linzie: I just don't know how she does it. Grace under pressure, calm in the storm, and a huge capacity for hard work arising out of a passion for neurophysiotherapy and how ACPIN might further its cause. She is a Professor of Multi-tasking, who has managed to fit in having two babies in her brilliant seven year term of office. I imagine her preparing for the next ACPIN meeting while changing a nappy or thinking through constitutional changes in ACPIN while in labour.

Anyway, Linzie, you must have very mixed feelings about the end of what has been a fantastic chairpersonship of ACPIN, during which this Special Interest Group has grown in every respect. A mixture of relief at laying down a burden and a touch of sorrow at no longer being at the helm of what is a very exciting group – the premier group in the CSP. You know that you are handing over to a captain with peerless credentials, and a brilliant track record as one of your team, in Nicola. Anyway, thank you for everything you have done for ACPIN, and for bringing so much fun into my life (this will need to be edited before being published in *Synapse* in case people misunderstand us) and enjoy your well-earned retirement, basking in the glow of the collective achievement you have headed up.



**CHAIR'S REPORT**

Linzie Bassett

The Chairperson's report is intended as a resume of the year's activities within the association and outlines future plans. This report especially allows me the opportunity to offer personal thanks to all the dedicated members of the National Committee.

Sadly, this is the end of my term of office as Chair, I will be stepping down today after many happy years working on the National ACPIN Committee. It has been an honour to be part of such a dynamic, forward thinking association and more recently I have felt very proud to lead such a group, as I feel it has gone from strength to strength.

CIGs play an invaluable role in decision making due to their close links with the CSP. They are at the forefront of new initiatives, research and policy making decisions. I would definitely encourage members to join local committees.

I commenced my role as Chair in 1997 and during this time we have hosted three residential conferences, four Congress programmes and been actively involved in research, the NSF's and NICE Guidelines. *Synapse* has evolved and has become a recognised journal in its own right. I hand over Chair to Nicola Hancock, who is current Vice-Chair, she will be formally voted in as Chair at the Executive Committee meeting in May. I wish her every success and I am sure she will do a superb job.

One longstanding regional rep resigned last year, we wish Janice Champion well in her new ventures. Following our last AGM four new Executive Committee members were elected: Ros Cox, Jo Nesbitt, Anne Mc Donnell and Emma Forbes. Louise Rodgeron was co-opted onto the Committee in August.

Prof Ray Tallis has been in post for two years and is a valuable asset to the Committee. He has been able to attend National meetings and has provided a wealth of information, he has also been able to offer support to

'struggling' physiotherapy services. As some of you are aware he presented an excellent lecture on Ethical Dilemmas at Congress. Ray has kindly accepted our invitation to remain as President for a further year.

On checking my numerous files recently, I discovered that ACPIN commenced in 1981, with 104 members, it is heartening to know that since then membership has grown to 1,400 members, an amazing 1,246% increase! So far this year nearly 900 members have renewed their membership. This is a true indication of how successful ACPIN is as a CIG. A planned silver jubilee celebration will take place in 2006 at the next residential conference.

In October 2003 we hosted an extremely successful Congress programme entitled 'Progressive Disorders'. The lectures were well attended and the fringe meeting on 'Intermediate Care' provided the opportunity for lively debate. The feedback from the CSP regarding our programme was every encouraging. We are planning to submit a programme to the CSP for Congress 2005 with a proposed title of 'Balance'.

Our second Conference this year will be on the topic of 'Neurophysiotherapy and its clinical relevance'. The date being Saturday 13th November 2004 at National Hospital, Queen's Square, London. See poster in foyer for further details.

*Synapse* is becoming a well-recognised journal and with the changes to *Physiotherapy* it is envisaged that we will receive an increase in articles for submission. As always I urge you to contribute to your journal. I would like to thank Louise Dunthorne who is now our *Synapse* co-ordinator and Kevin Wade our graphic designer.

In July 2003, ACPIN was officially recognised as a CIG by the CSP. The Executive Committee had to submit evidence to fulfil a variety of categories and construct a two-year action plan. The headings being:

- Peer support

- Influencing undergraduates curriculum
  - Influencing and informing
  - Promoting physiotherapy
  - Quality assurance
  - Research and clinical effectiveness
- I thought it might be interesting for you as members to be informed as to the future subgroup plans:

- **Events** as previously mentioned
- **Research**
  - To continue with research bursary
  - Offer student prize?
  - Research form in *Synapse*
  - Response to ongoing research agendas
- **Communication**
  - ARC – produce motions, this year, equal access to Botox and appropriately staffed clinics for botox.
  - *Synapse*
  - Website
- **Clinical practice**
  - Use of outcome measures to link in with Sue Mawson and Sarah Tyson.
  - Review of Standards Booklet
  - Review of documents commenced Jan 2004
- **General**
  - Review and update of existing Constitution has taken place, comments were sought by members via *Synapse*. This will be formally voted in later.

The review of the *Splinting Guidelines* booklet will hopefully commence later this year. The project will be led by Rowena Wright working in collaboration with Prof Anne Ashburn.

ACPIN is hoping to forge links with the interactive CSP site following a short presentation by Julia McKenzie and Nigel Senior.

During August ACPIN was approached to act as a consultant by scriptwriters for a leading television soap, *Emmerdale*. Nicola Hancock and I were privileged to have had input into the storyline of 'Terry's stroke'. We believe it certainly raised the profile of Stroke and neuro-physiotherapy. I don't think we have been nominated for any script writing awards as yet!

ACPIN has been actively involved in the consultation process for the NSF for 'long term conditions', the supplement produced by the CSP in September 2003 stated that the focus of the NSF being 'principally neurological conditions'. We welcome such a document and should be constructing implementation plans as identified in the supplement. We will keep you up-to-date with the progress of the NSF.

Finally, I would like to thank you for listening, I hope this highlights the amount of work undertaken by ACPIN on your behalf. I would like to thank all our members for your continued support and wish the new Committee every success.

**TREASURER'S REPORT**

Jackie Sharp

For the year end 31st December 2003

**Income and expenditure**

Both income and expenditure have risen rapidly, and this year we have a profit following on from the losses of the last few years (Figure 1).

Income for 2003 has increased from £41,940 to £76,012 (see Figure 2). Course fees have remained our largest generator of income but this year it has increased considerably from £11,499 to £40,921. Membership income has increased by £4,449. This is as a result of an increase in the membership fee by £2.50 in 2003 and the continued increase in our membership numbers. The increase in membership is also reflected by more capitation income from the CSP. Requests for the *Manual Handling* document and the ACPIN database have continued to bring in a small income.

	2003	2002
	£	£
Income	76,012	41,940
Expenditure	69,884	41,943
Surplus/(Deficit)	6,128	(3)

Figure 1

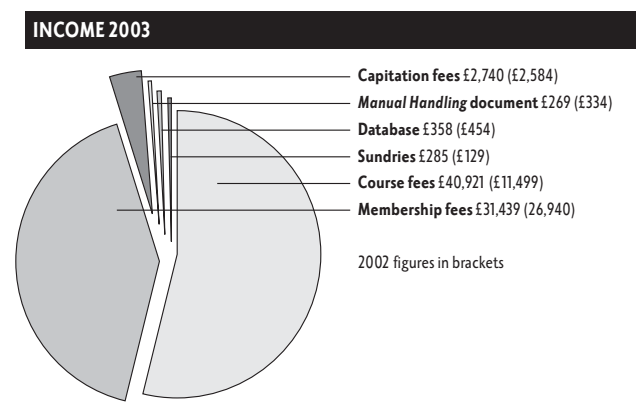


Figure 2

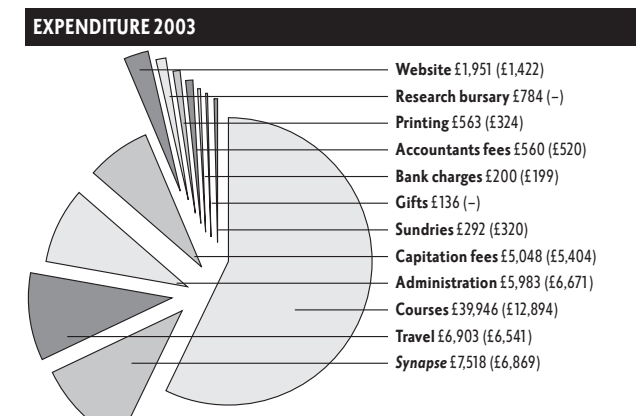


Figure 3

	Income	Expenditure	Surplus/(Deficit)
	£	£	£
March 2003 Upper limb	34,261	33,789	472
CSP Congress 2003	6,660	6,157	503

Figure 4

As you can see from Figure 3, the increase in expenditure has also been from our courses. Our other overheads remained on track. Running the ACPIN website, producing *Synapse* and travel expenses have all shown smaller increases this year whilst administrative costs were down. This reduction was due to the increased use of email amongst committee members and by reducing the number of National Committee meetings held. A new expenditure for 2003 was the ACPIN Research Bursary. This was awarded to two members and amounted to just under £800.

A financial breakdown for the courses run in 2003 is shown in

Figure 4. It can be seen that the March Residential Conference on the Upper Limb was a huge event for ACPIN in terms of costs, and was very successfully brought in on budget. The CSP congress, our other event in 2003, also made a small profit of £503. Our income for Congress is in the form of a capitation fee from the CSP and is based on the number of ACPIN members that attend. We do not get these figures until after the event, which makes Congress extremely difficult to budget for, particularly as we hope to invite more international speakers in the future.

The balance sheet on the 31st December 2003 showed a profit of £6,128 after a loss of £3 last year, and

**CAPITAL AND RESERVES 2003**

	£
Reserves brought forward	10,316
Surplus/(Deficit)	6,128
Reserves carried forward	16,444

Figure 5

we were able to carry forward increased reserves of £16,444 into 2004 (Figure 5).

Last year I reported that it was our intention to increase ACPIN's reserves on the advice of our accountants. These had been falling in recent years as administrative costs rose, new projects were taken on and our conferences expanded. National ACPIN events have to be planned and organised up to two years in advance and to ensure that the organisation is protected for this type of expenditure it is essential that ACPIN maintains sufficient reserves.

This year's profit has allowed ACPIN to manage the one day events and activities planned for 2004, but in order for us to safely run residential courses in future years, submit a programme for Congress in 2005 and produce documents such as the revised ACPIN Standards, the reserves still need to be increased further. It was therefore agreed by the ACPIN Executive Committee in 2003 that the membership fee should be increased to £25.00 in 2004. This will ensure that ACPIN's reserves equal a sum representing six months of our planned expenditure for the next year. It will also bring our membership fee in line with other similar sized CIGs and we will not have to increase fees further over the next two years.

**Copies of accounts 2003**  
Full copies of the ACPIN accounts are available on request

**Vote for accountants**  
Vote to retain the current accountants for 2004  
Langers, 8-10 Gatley Road, Cheadle Cheshire, SK8 1PY

**DELEGATE'S REPORT**

Paula Cowan Scottish Regional Representative

Anyone who missed this one day conference held in the Hilton Hotel in Northampton missed an excellent day! I will now try to summarise the events for you and give you a taste of what you missed or a reminder of what you heard!

The day was started by Wendy Dickens giving a very detailed look at the biomechanics of gait. This was an excellent, high tech presentation that really did not get the time it deserved to digest all the information being given! She had video clips and gait lab analysis that goes beyond our everyday assessment. If that was not enough she also added her own personal touch of humour to make it a truly interesting presentation.

Next up was Dr Lynn Rochester who updated us all in the 'Neural control of gait and Central Pattern Generators'. Once again a very good presentation. It was evidence based and applied to clinical practice which meant it was applicable to every person in the room! I forgot to say there were at least 200 people in the room if I estimate correctly.

The third person Cherry Kilbride put us all to shame at the research she shared with us on 'positive support reactions'. The inspiring thing was, she presented it in such a down to earth manner it encouraged more of us to get out there and prove that physiotherapy works!

The day continued at a high standard with Heather Thornton presenting 'Which patients walk and why?' Once again evidence based, informative and relevant to clinical practice – what more could we ask for!

Dr Sarah Tyson followed with a review of AFO's and brought some informative discussion around this topic. Nearly there!

Christopher Manning presented 'Treadmill Training' and had some excellent video clips to show this expensive high tech equipment. He

shared personal experience and gave an honest presentation.

Last but definitely not least was Christine Singleton who gave a stimulating talk on FES. It gave more than just an introduction, but a good insight to the benefits and application.

In short it was an excellent day! The venue was superb as was the food. I for one will look forward to the next day!

## REVIEW OF ACPIN STANDARDS

Louise Dunthorne

The ACPIN Committee are in the process of reviewing the ACPIN standards. The current publication (1995) is being revised to compliment the CSP Core Standards (2000) from a neurological perspective.

In order to make this process as comprehensive as possible each region has been allocated two specific standards to review. If you have any views on content or format of the standards, or wish to be involved please contact your Regional Representative. It is obviously vital that these standards are relevant to all areas of neurological physiotherapy, so your views are most important.

## COMMUNICATIONS SUB-GROUP REPORT

Emma Forbes

ACPIN have submitted two motions for debate at this year's ARC. They are as follows:

### MOTION 1

We demand that the CSP immediately lobby NHS services nationally to secure funding to provide equal access to the prescription of botulinum toxin for the treatment of spasticity, particularly in view of growing evidence of regional variations.

### Explanatory note

There is strong evidence to support the use of botulinum toxin for the treatment of spasticity, for example the Multiple Sclerosis NICE guidelines. However it is becoming increasingly apparent that there are regional inequalities regarding access to this treatment. The CSP should campaign on behalf of members for all physiotherapists to be able to access botulinum toxin for treatment of their patients, in accordance with national guidelines.

### MOTION 2

We demand that the CSP immediately lobby NHS services nationally to recognise that physiotherapists are essential in the management of patients following botulinum toxin injections and therefore must be an integral part of the multi-disciplinary team providing this service.

### Explanatory note

A successful outcome following botulinum toxin is highly dependant on co-ordinated and timely physiotherapy intervention. However there is strong evidence that there are regional variations in the physiotherapy input. The CSP should campaign to raise the profile of the need for physiotherapy intervention in the management of patients following botulinum toxin injections.

At present the North Region is providing ACPIN with very enthusiastic representatives at the conference.

We continue to wait the outcome as to whether our motions have been accepted for debate.

The other issue that the Communication Group is dealing with is the long overdue updating of the regional representative pack.

## CLINICAL PRACTICE AND AUDIT GROUP SUMMARY

Jo Tuckey Membership Secretary

The group has now completed an article about outcome measurement which is printed in this edition of *Synapse*.

Our next project is to review the ACPIN *Standards of Physiotherapy Practice in Neurology* which were last published in 1995. It is recognised that neurology specific standards may or may not be necessary, given that the Chartered Society of Physiotherapy's *Core Standards of Physiotherapy Practice* may provide sufficient detail. However, all members will have opportunity to comment. Each region will be given the task of reviewing a couple of the CSP's practice standards to establish if further detail is required. Anyone interested in being involved, please contact your local regional representative.

## EVENTS SUB-GROUP

Anne McDonnell

There has been much interest in the 'Exploring Gait' National ACPIN one day Conference in Northampton on 20th March 2004, and, at time of this going to print, it is anticipated that it will be booked to capacity! We are currently finalising the one day conference on the 13th November 2004, to be held at the National Hospital for Neurology and Neurosurgery, London on clinically related neurophysiology.

Looking ahead to 2005, another study day will be held in March, for which details will be published closer to the time. ACPIN are also planning to have a programme for the CSP Congress in October 2005 and to organise a residential course in March 2006.

Ideas for topics and/or speakers are always welcome. Please speak to any of the ACPIN Committee.

## FEEDBACK FROM CI/OG CONFERENCE

Louise Rogerson

I was very excited to be given the opportunity to attend this conference on behalf of ACPIN. The programme looked very interesting with a broad spectrum of practitioners in attendance.

On the Friday following an introduction, Pen Robinson of the CSP presented a session discussing the role and effective use of committees. This included some clear guidelines for committees to follow, all of which are currently utilised by national ACPIN, but I wonder about at a regional level? There was emphasis on the use of email to communicate effectively and save time at meetings, and on using written reports which are circulated rather than verbal feedback. The CSP have almost finished an information paper for CI/OG's, and there is a dedicated officer – Leonie Dawson.

The second session was Leonie Dawson on how to manage and understand the relationships of sub-groups within the CI/OG. This was a workshop session following a review from Leonie on what recognised groups have to offer and increasing awareness of the non-recognised groups. In groups we then discussed questions around how best to support and raise the profile of these smaller groups. These results will be collated and used to inform a consultation process on how to move forward on this issue.

The third session was Pen Robinson discussing the scope of practice. The ongoing development of the profession was recognised and it raised key questions about who is responsible for extending the scope, do we let it develop or do we insert parameters and what is the impact on insurance/liability? Generally the feedback from the workshop on these issues was positive with a high level of consensus on parameters in case examples.

In the evening we had a delightful meal and Phil Gray gave a short, but positive speech about the development of the profession. He highlighted the growing numbers of students and the development of our roles, but he did emphasise the need for ongoing promotion at all levels to keep up the momentum.

On Saturday, the first session was Alison Rushton discussing the issue of endorsement of courses validating clinical skill development. This session promoted a large amount of discussion and debate. A few of the issues raised were the lack of courses for senior staff, that some courses have assessment/exams while others do not, that there should not be an emphasis on a course tick list in CPD (this will be supported by agenda for change), that the validation of courses by the CIG's would be both costly and time consuming, and that short courses do play a vital role in CPD. It is hoped that the knowledge of skills network to be launched in 2006 will assist with the CPD problem.

The next session was Kay East from the DoH discussing AHP's within the DoH (although this was not the title in the programme, Mrs East decided to do her own topic). This was a very positive presentation on how the AHP's have progressed in terms of representation and population. The devolution of power to local communities was also highlighted as a positive step to reduce centralised bureaucracy, however comments from the floor pointed out that this can reduce the AHP's voice as the numbers at a local level are much less compared to the medical and nursing contingent. As ACPIN rep I put forward the issue of rehab space and that the numbers of physiotherapy staff may be increasing but the provision of the equipment and environmental needs to accompany the staff are not forthcoming and that in isolation the physiotherapists at a local level are struggling to change this. Mrs East acknowledged that

equipment was a problem, but that local negotiation should be continued to achieve a change. Mrs East left us with ten points to consider, among them, to emphasise the evidence and effectiveness of practice, to develop partnerships, and to create a better understanding of specialisms.

The final session of the morning was Philippa Ford on engaging the members in the political process – practical experience from Wales. This was an excellent talk giving practical advice on the circulation of information and achieving true representation at a high political level. With ACPIN's concerns about rehab space this was particularly relevant. The setting up of e-networks was proposed for consultation of papers with the use of red-penning techniques on the computer which allow you to read a paper and put in your changes which can then be tracked. This may be useful for the CSP to utilise and it may provide such a network. The results of pro-active lobbying, as opposed to reactive, were clearly shown in the examples given.

In the afternoon the discussion session was aimed at finishing the discussions from the morning and also addressing how to reduce the response workload on the CIG's. I put forward the need for longer timescales in order to have a true response from the membership rather than one individual on the committee – this once again promoted the use of the networks.

In between the sessions there was a lot of networking opportunities and the sharing of clinical and organisational ideas was promoted.

## OUTCOME MEASURES

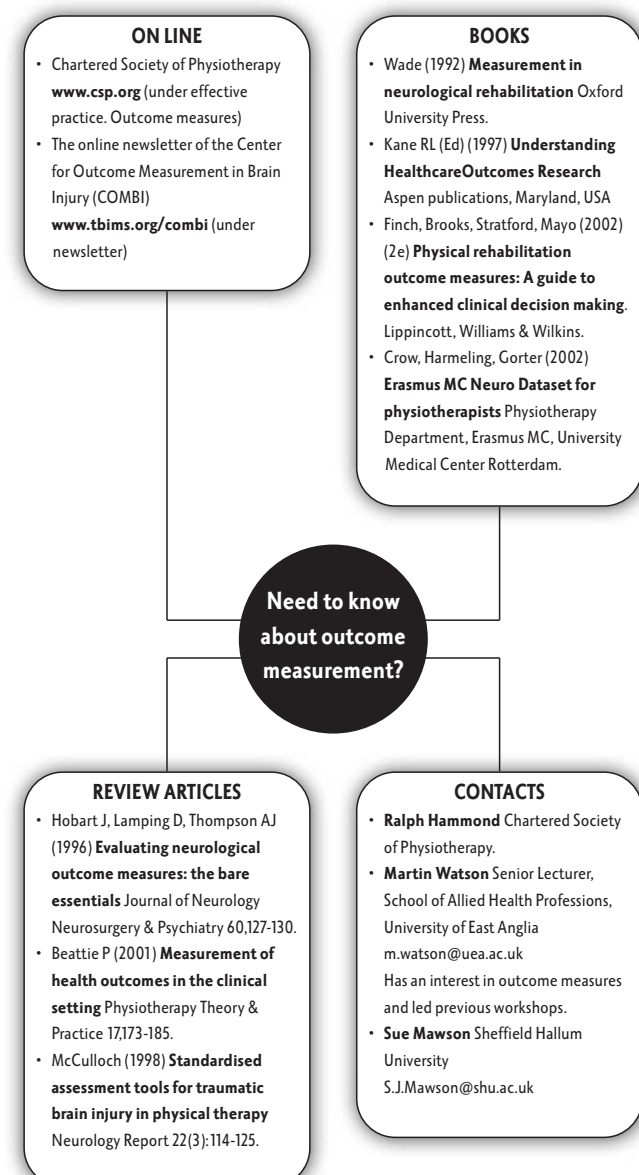
The ACPIN executive committee frequently receives requests from members about recommended outcome measures. The use of outcome measures to evaluate clinical practice is one of the Chartered Society of Physiotherapy's core standards of physiotherapy practice and therefore supported by ACPIN. The challenge for the clinician is knowing when to use

them and which one to choose.

There are many outcome measures which are suitable for use in neurophysiotherapy practice. Several sources already exist which either provide advice on appropriate use of outcome measures and/or describes suitable measures.

The diagram below outlines where up to date information about relevant outcome measures can be sought. We hope it is of use!

(See also North West Outcome Measures Project update on page 31.)





RESEARCH SUBGROUP  
REPORT

Mary Cramp

The work of the research subgroup is continuing at pace. You can read the latest news about the Research Bursary in *Research Forum*, our regular feature in *Synapse*. Now that the Research Bursary scheme has been running for 18 months or more, we are planning to review the scheme and we would welcome comments from the membership. Likewise, we are always happy to receive suggestions for features in *Research Forum*. You can feed this information through your regional representatives or directly to Mary Cramp (School of Health and Biosciences, University of East London, Romford Road, Stratford, London E15 4LZ or email [mary.cramp@talk21.com](mailto:mary.cramp@talk21.com)).

More recently, the Research Subgroup has been working on developing a survey of neurological physiotherapy services in the NHS. The survey is the considered response of the ACPIN national committee to information from and concerns raised by ACPIN members. The survey is enclosed with this edition of *Synapse*. We are aware that we have asked a lot of members in the last couple of years with respect to questionnaires/surveys. However, we hope the information will be useful to the committee and the membership and we will be reporting back to you on the outcome in *Synapse* in the Autumn.

## Other news

## UPDATE ON NICE

**Ralph Hammond** Professional Adviser, The Chartered Society of Physiotherapy

This article aims to update members on those guidelines from the National Institute for Clinical Excellence (NICE) guidelines programme relevant to ACPIN. Two guidelines have been published, and work on two more is in progress.

NICE publishes guidelines for the NHS in England and Wales on topics chosen by the Department of Health and the National Assembly for Wales. It is expected the guidelines are used to inform and underpin clinical decision making and practice.

**Multiple sclerosis**

NICE has issued a clinical guideline on the management of multiple sclerosis. The guideline aims to be a significant driver for change in an area of healthcare that has lacked a consistent and coherent national approach.

The guideline prioritizes for implementation six themes: the need for a specialised service, rapid diagnosis, seamless services, a responsive service, a sensitive but thorough problem assessment, and self-referral after discharge.

As well as the guidelines, NICE has also published supplementary information regarding the characteristics of a useful measure for the effect of a treatment or the extent of some aspect of a person's situation and an expanded model of Illness (WHO ICF).

The guidelines and supplementary information can be downloaded free, from the NICE web site, [www.nice.org.uk](http://www.nice.org.uk).

ACPIN, CSP and the MS Society are working to produce an implementation pack for the guideline, which will be published by the MS Society in May 2004.

**Pressure ulcers**

NICE has issued a clinical guideline on pressure ulcer risk management and prevention, including the use of pressure-relieving devices for the prevention of pressure ulcers in primary and secondary care.

This, which incorporates the existing NICE clinical guideline on pressure ulcer risk assessment and prevention (first published in 2001), outlines practice for health professionals caring for individuals who are vulnerable to or at risk of developing pressure ulcers. See the NICE web site, [www.nice.org.uk](http://www.nice.org.uk).

The guideline identifies clear areas for practice on risk assessment and prevention: Identifying individuals vulnerable to or at elevated risk of pressure ulcers, the use of risk assessment tools, risk factors, skin inspection and on pressure ulcer prevention: positioning, seating, use of aids, pressure-relieving devices (beds, mattresses and overlays) and education and training.

**Falls**

NICE is due to publish a guideline on the assessment and prevention of falls in older people in August 2004. The CSP secured a place for a physiotherapist on the working party (the guideline development group), and has participated in all consultations on the document to date. Once the guideline is published more information will be posted on the CSP web site, in *Frontline*, and in the next edition of *Synapse*.

**Parkinson's Disease**

NICE has started work on a guideline for the diagnosis, management and treatment of Parkinson's Disease in primary and secondary care, and is due to publish it in March 2006. It intends to include a component on the role of physiotherapy. The CSP has

secured a place for a physiotherapist on the working party (the guideline development group), and will participate in all consultations on the document. Updates on progress will be posted on the CSP web site.

THE NEUROLOGICAL  
ALLIANCE

**Jackie Sharp** ACPIN Treasurer

The Neurological Alliance is a collaborative forum of a wide range of neurological charities with a main objective of improving the quality of life for people in the UK affected by a neurological condition.

It now has over 50 member organisations and, in order to maximise its influence, the alliance has been developing more formal partnerships with professional organisations including the CSP and ACPIN.

In 2002, the Neurological Alliance produced standards of care for people with neurological conditions entitled *Levelling Up*.

**AGM of the Neurological Alliance  
5th November 2003**

As a partnership organisation, ACPIN were invited to the AGM held at the MS National Centre, London in November 2003.

Maureen Kelly, Chair of the Neurological Alliance opened the meeting with her annual report. The Alliance's key activity over the past year had been the continued development of partnerships with professional and member organisations and involvement in the development of the National Service Framework for long term conditions.

Other highlights included the development of a partnership working with the National electronic Library for Health in order to scope a potential new specialist library on neurological conditions, and two further Neurological Alliance publications. These were: *Neuro Numbers* – a review of the

numbers of people in the UK with neurological conditions and *Getting the best from neurological services* – a booklet designed for people newly diagnosed with a neurological condition.

Following the AGM there was a programme of guest speakers under the title 'Modernising Neurological Services'. This included Dr Christopher Kennard, President of The Association of British Neurologists (ABN) who launched the ABN publication *UK Neurology – the next ten years. Putting the patient first* (this can be found at [www.theabn.org](http://www.theabn.org)). ABN is a partnership organisation of the Neurological Alliance and this document outlined their vision for the development of neurological services with in the UK.

In the afternoon, Stephen Ladyman MP, Parliamentary Under-secretary of State for Community Care addressed the AGM and took questions from the audience on concerns regarding the NSF for long term conditions. This was followed by an update on the work of the Modernisation Agency.

Further information on the Neurological Alliance including details of their publications can be found at [www.neurologicalalliance.org.uk](http://www.neurologicalalliance.org.uk)

THE NORTH WEST  
OUTCOME MEASURES  
PROJECT: UPDATE

**Sarah Tyson** on behalf of the steering group

The North West Neuro Physios Group (NWNPG) was formed in 2002 as a clinical network of senior physiotherapists working with neurological patients to promote high quality evidence-based practice. The highest priority issue we identified was the use of outcome measures. The use of standardised outcome measures has frequently been recommended but few have been widely adopted. Members of

NWNPG were all using outcome measures but the robustness and suitability of the measures were variable and none were used consistently. We needed information to inform us about what outcome measures were available, how to use them and the pros and cons of each, with recommendations about which were the best. This information is not currently available so we undertook a project to provide!

Our main aim was to produce a comprehensive user's information pack about outcome measures in neurological physiotherapy, to cover all client groups, settings (acute, rehabilitation and community) and functional areas in which neurological physiotherapists work. The outcome measures will be based on patients' problems and needs, rather than profession specific.

The project started in 2002, since then we have developed a framework for the assessment process so that the relevant assessment areas can be identified and this is being prepared for publication. We are currently undertaking extensive literature searches to identify the measurement tools and the papers supporting them. Clinical groups across the North-West are preparing to undertake the literature reviews and data extraction about the measurement tools. We expect this will take some time! Then the final information will be put together into a comprehensive resource, probably in 2005.

For more information about the project, or if you would like to participate contact Sarah Tyson at [s.tyson@salford.ac.uk](mailto:s.tyson@salford.ac.uk) or 0161 295 7028.

## PSP ASSOCIATION

**Brigadier Michael R Koe** OBE Chief executive

The PSP Association is the leading care and research charity for people with Progressive Supranuclear Palsy.

With effect from 14th April we are

closing our Virgin email addresses. The new service will be operating from March 8 2004 and will be more suitable for our needs.

The new general contact address will be [psp@pspeur.org](mailto:psp@pspeur.org) This can be personalised, if you wish to send to and individual please use the following format: [christianname.surname@pspeur.org](mailto:christianname.surname@pspeur.org)

Or for support please use: [support@pspeur.org](mailto:support@pspeur.org)

We would be very grateful if you could update your address book as soon as possible although the old address will be live until April 14th.

**Multidisciplinary care  
in Parkinson's disease  
and parkinsonism  
from science to practice**

**THE 9TH NATIONAL CONFERENCE  
15TH JULY 2004**

**ROYAL COLLEGE OF PHYSICIANS, LONDON**

This meeting will revisit two difficult areas for clinical practice in Parkinson's disease – current research on falls and palliative care. Topics will include:

- falls – turning, reaching and rising
- report from the RESCUE project
- visuospatial problems
- treatment abatement at the end of life
- PEG feeding decisions in practice
- discussion session on palliative care
- PD nurse specialists – where to now?

**WE HOPE TO SEE YOU THERE!**

Organised by MEP Ltd on behalf of the BGS PD Special Interest Group  
For more information or to register for the conference, please call MEP Ltd on **020 7561 5400** or email [info@mepltd.co.uk](mailto:info@mepltd.co.uk)

MEDICAL EDUCATION  
**MEP**  
PARTNERSHIP  
LIMITED  
more than words





# Exploring gait

ACPIN conference and AGM  
Saturday 20th March 2004  
Hilton Hotel, Northampton

"I just want  
to walk  
again"

## Abstracts and biographies

### LECTURE 1

## Biomechanics of gait

**Wendy Dickens** MSc MCSP SRP  
Clinical lead for Sheffield Children's Hospital motion analysis laboratory

Human biomechanics is concerned with the inter-relationships of structure and function with respect to the kinematics and kinetics of motion. Anatomy, physics and mathematics are used to determine and measure the quantities of motion (time, space, force) in order to understand human movement.

This presentation will focus upon the major biomechanical principles relevant to gait. The gait cycle, gait phases and basic functions will be reviewed. Normal kinematics (motion) and kinetics (forces) will be covered in addition to the mechanisms for energy efficiency and the pre-requisites for gait. Anatomical and anthropometric considerations will be included with particular reference to the foot.

Patient videos will be used to illustrate the application of biomechanical principles in pathological gait. These cases are also included to highlight the importance of biomechanical principles in clinical decision-making and to emphasise how their application can optimise the environment for neuromuscular performance.

### REFERENCES

Adrian MJ and Cooper JM (1995) *Biomechanics of Human Movement* Brown & Benchmark.

Basmajian JV and De Luca CJ (1985) *Muscles Alive* Williams & Wilkins: Baltimore.

Craik RL and Otis CA (1995) *Gait Analysis: Theory and Application* Mosby: St Louis.

Gage JR (1991) *Gait Analysis in Cerebral Palsy* MacKeith Press: New York.

Inman VT, Ralston HJ, and Todd F (1981) *Human Walking* Williams & Wilkins: Baltimore.

Low J and Reed A (1996) *Basic Biomechanics Explained*. Butterworth Heinemann: Oxford.

Muybridge E (1955) *The Human Figure in Motion* Dover Publications Inc: New York.

Perry J (1992) *Gait Analysis: Normal and Pathological Function* Slack: NJ.

Smith LK, Weiss EL and Lehmkuhl LD (1996) *Brunstrom's Clinical Kinesiology* 5th Edition FA Davis: Philadelphia.

Whittle MW (2001) *Gait Analysis: An Introduction* Butterworth Heinemann: Oxford.

Winter DA (1995) *Human balance and posture control during standing and walking (Review)* *Gait & Posture* 3,193-214.

### USEFUL WEBSITES

[www.cmasuki.org/CMAS](http://www.cmasuki.org/CMAS): Clinical Movement Analysis Society (UK and Ireland)

[www.cgmas.org/GCMAS](http://www.cgmas.org/GCMAS): Gait and Clinical Movement Analysis Society

[www.esmac.org/ESMAC](http://www.esmac.org/ESMAC): European Society for Movement Analysis in Children and Adults

[www.guardian.curtin.edu.au/cga](http://www.guardian.curtin.edu.au/cga)

**Wendy Dickens** qualified in 1982 and initially worked in the NHS specialising in orthopaedics and musculo-skeletal rehabilitation. She gained an MSc in Rehabilitation Studies from Southampton University then worked for IBM developing and implementing a health promotion programme. Following two years of private practice and three years in the USA she returned to the UK as a research physiotherapist and subsequently gained a post-graduate diploma in clinical gait analysis. From 1998 to the present day Wendy has been the clinical lead for Sheffield Children's Hospital motion analysis laboratory, providing gait analysis services for children and young adults with complex neurological and

orthopaedic gait pathologies. There is a strong teaching commitment to staff within and outside of the trust and to graduate programmes at Sheffield and Huddersfield Universities.

Recently completed research projects include the validation of a visual gait analysis tool for children with hemiplegic cerebral palsy and the correlation of subjective and objective outcome measures in children with resistant talipes equino-varus. Ongoing projects include the development of functional outcome measures in anti-spasticity management, long term post-operative outcomes in children with cerebral palsy and the validation of a 3D model for children with achondroplasia.

### LECTURE 2

## Neural control of gait and central pattern generators

**Dr Lynn Rochester** Reader in Neuro-Rehabilitation, University of Northumbria

For the individual suffering neurological dysfunction, the desire to regain walking ability is often the primary goal of rehabilitation. Whilst research suggests that rehabilitation results in measurable functional gains, there is little evidence to support the efficacy of one treatment choice over another.

Contemporary approaches to the rehabilitation of gait in people with neurological disorders, such as the use of treadmill training with and without body weight support, is receiving increasing interest by therapists. The scientific basis for treadmill training is underpinned by early studies examining the neural control of gait in animals. Subsequent studies evaluating evidence for motor control mechanisms in humans similar to those in animals, stimulated the development of novel gait retraining methods such as treadmill training. Recent reviews of the literature have highlighted the need for caution in adopting novel methods of gait retraining. It is timely therefore to revisit the theory underlying the development of contemporary approaches to gait retraining.

The presentation aims to review the scientific evidence for the neurophysiological control of gait. Evidence from studies in animals and humans will be compared. The role of motor control mechanisms in the spinal cord and higher centres in the control of



Nicola Hancock, the new ACPIN Chair with the opening speaker Wendy Dickens.

gait will be explored, together with the clinical implications of these findings. The use of task specific training, issues of weight bearing, motor relearning with reduced supraspinal input, the importance of sensory feedback for modulation of motor control mechanisms are considered and the key points for rehabilitation will be summarised.

**Dr Lynn Rochester** has clinical and research interests in neurological rehabilitation. Her research interests include muscle plasticity, motor control and the influence of therapeutic intervention. She returned to the UK from New Zealand to work at Northumbria University as a Reader in Neuro-Rehabilitation and is currently involved in a number of research projects. These include acting as the scientific lead for Northumbria on a European multi-centre research study, evaluating the effects of physiotherapy using cueing strategies on walking in Parkinson's disease (The RESCUE project). This has led to a developing area of work evaluating the effects of attention

and cognition on gait and function. In addition, collaboration with Teeside University through the Teeside Centre for Rehabilitation Science with Professor Howe has led to the development of a number of studies evaluating outcome measures in addition to strengthening research networks in the North of England. She is involved in two research studies in New Zealand investigating community ambulation in people with stroke and evaluating the influence of electrical stimulation on motor control in stroke subjects. Lynn also continues to maintain her clinical interests in neuro-rehabilitation when possible.



Delegates relax between sessions in the main conference hall.

## LECTURE 3

## Positive supporting reaction and physiotherapy intervention

Cherry Kilbride MSc MCSP SRP Head of Physiotherapy, Royal Free Hospital, London

The purpose of this study was to evaluate the physiotherapy intervention in the treatment of the positive supporting reaction (PSR) in the neurological patient. A single subject experimental A-B design was used.

The A phase comprised of generalised treatment (based on the Bobath Concept), phase B had the added intervention of specific handling techniques to the affected lower leg.

Prior to the main study, a pilot study was carried out to establish the presence of increased pressure exerted through the hemiplegic leg. It was also necessary to identify and test a suitable measuring tool for this phenomena.

Four subjects were recruited for the study and the following variables were measured:

- the range of movement at the ankle joint
- the pressure exerted through the affected foot
- weight bearing through the affected lower limb.

The results demonstrated that changes occurred in all the dependent variables with the introduction of specific handling techniques. However, the changes were not statistically significant in all the subjects, with the exception of the downward pressure exerted by the affected foot.

## REFERENCES

Bobath B (1990) *Adult hemiplegia: evaluation and treatment*. 3rd edition Heinemann Physiotherapy, London.

Edwards S (2002) *Abnormal tone and movement as a result of neurological impairment: considerations for treatment* In: Edward S, editor, Neurological Physiotherapy. London: Churchill Livingstone.

Hamdy S, Rothwell JC, Aziz Q et al (2000) *Organization and reorganization of human swallowing motor cortex: implications for recovery after stroke* Clinical Science 99/2, 151-157.

Magnus R (1926) *Some results of studies in the physiology of posture* The Lancet: September 11, 531-535.

Zhan S and Ottenbacher K (2001) *Single subject research designs for disability research* Disability & Rehabilitation 23(1), 1-18.

**Cherry Kilbride** is currently Head of Physiotherapy at the Royal Free Hospital in London, having originally joined the hospital in 1995 as a Clinical Specialist in Neurosciences. She previously worked with neurological clients in a variety of settings across London, including five years at the Regional Neurological Rehabilitation Unit at the Homerton Hospital in East London. She completed an MSc in 1993 and is currently midway through her part-time PhD.



Cherry Kilbride gave the third lecture 'Positive supporting reaction and physiotherapy intervention'.

## LECTURE 4

## Which patients walk and why?

Heather Thornton MBA (Open) PGCE Grad Dip Phys MCSP SRP MILT Senior Lecturer, University of Hertfordshire

For many patients after Stroke walking is their primary goal. Prediction of which patients will walk is multi-factorial and complex, and is becoming increasingly important as evidence based practice is leading to the development of patient pathways and criteria for accessing rehabilitation. The main factors on which prediction can be based may be grouped into three main areas:

- Pathology/Impairment/Physical abilities
- Psychosocial
- Rehabilitation that the patient will receive.

The use of impairment measures and physical abilities to predict walking ability has been extensively researched mainly considering the first three months post-stroke, but the majority of authors accept that these factors cannot be viewed in isolation. There is limited research on the psychosocial factors and the extent to which rehabilitation influences walking ability. Most authors do suggest that rehabilitation does influence walking ability, although there is limited evaluation of the components of rehabilitation that are most effective. There is some evidence that task specific training is more effective, intensity is relevant and earlier rehabilitation is more beneficial. Physiotherapists are ideally placed to predict walking ability as they:

- have skills in assessment of the patient's impairments and in particular their physical ability
- can develop a good rapport with the patient and so build an understanding of their psychosocial status
- know what rehabilitation services the patient will receive.

Studies have shown that physiotherapists can predict accurately a patient's ability to walk (Jones 1998, Kwakkel et al 2000, Thornton et al 2001), but are less able to predict the time taken to achieve it. Physiotherapists need to be responsible in predicting walking ability. Clinically, care needs to be taken that we are not creating self-fulfilling prophecies, and researchers must consider the predicting factors to ensure parity between subject groups.

## REFERENCES

Jones F (1998) *The accuracy of predicting functional recovery in patients following a stroke, by physiotherapists and patients* Physiotherapy Research International 3(4), 244-56.

Kwakkel G, van-Dijk G M and Wagenaar R C (2000) *Accuracy of physical and occupational therapists early predictions of recovery after severe middle artery stroke* Clinical Rehabilitation 14(1), 28-41.

Thornton H, Jackson D and Turner-Stokes L (2001) *Accuracy of prediction of walking for young stroke patients by the use of the FIM* Physiotherapy Research International 6(1), 1-14.

**Heather Thornton** qualified in 1986 and has worked in several large London teaching hospitals. She specialised in neurological rehabilitation and went on to lead the therapy team at the Regional Rehabilitation Unit at Northwick Park Hospital. She undertook an MBA with the Open University and gradually



Heather Thornton spoke on the problems of predicting which patients will walk again after stroke.

moved into education, starting her current post as a Senior Lecturer at the University of Hertfordshire in 2000. She has a small private practice. Clinically she is interested in the management of severe disability including the use of botulinum toxin, and the implementation of Clinical Governance. Her interest in education, management and clinically, is in empowering individuals to achieve their full potential.

## CASE STUDY 1

## Use of orthotics in neurological physiotherapy

Sarah Tyson Research physiotherapist, University of Salford

Foot drop is a very common impairment in neurological conditions. People are unable to dorsiflex their foot far enough or fast enough to clear their toes during swing phase, which leads to a loss of heel strike or catching of the toes when walking. A slow and effortful gait pattern with loss of confidence and a high risk of falls is a common consequence. Orthotics are one way of managing this problem. This presentation will concentrate on the use of an ankle foot orthoses (AFO) to manage foot drop. The theory behind the effects of AFOs will be examined, the different types of AFO described, and evidence base for their use reviewed. Patients' views of AFOs and their pattern of use will be considered and finally, suggestions about the use of AFOs in clinical practice will be made.

## SUGGESTED READING

Condie E and Condie D (1995) *Orthotic Management of Stroke Patients in Physiotherapy in Stroke Management* Editor: MA Harrison Churchill Livingstone, Edinburgh.

Hesse S, Luecke DF, Jahnke MT and Mauritz KH (1996) *Gait Function in spastic hemiparetic patients walking barefoot, with firm shoes and with an AFO* International Journal of Rehabilitation Research 19, 133-141.

Lehmann J, Condon S, Price R and DeLateur B (1987) *Gait Abnormalities in hemiplegia; their correction by an AFO* Archives of Physical Medicine and Rehabilitation 68, 763-771.

Tyson SF, Thornton HM and Downes A (1998) *The effect of a hinged ankle-foot orthosis on hemiplegic gait; Four single case studies* Physiotherapy Theory and Practice 14, 75-85.

Tyson SF and Thornton HM (2001) *The effects of a hinged ankle-foot orthosis in hemiplegic gait: Objective measures and users' opinion* Clinical Rehabilitation 15(1), 53-58.

## CASE STUDY 2

## Treadmill training and neurological disorders

Christopher Manning Senior Lecturer, Faculty of Health and Social Care Sciences, St George's Hospital Medical School and Kingston University

Spinal animals can be trained to produce reciprocal limb movements similar to gait after training on a treadmill if some of the body weight is supported. Higher primates are able to produce these movements only if reticulospinal and vestibulospinal pathways are spared. A condition found in many people with Stroke or Incomplete Spinal Cord Injury.

Treadmill walking with partial bodyweight support (PBWS) has been shown to produce a physiologically more normal gait in people with neurological conditions and following training improvements can be made in functional walking.

This case report of a 76 year old man with incomplete spinal cord injury will illustrate some of the issues involved in the use of PBWS treadmill training in rehabilitation such as, time involved, patient choice, harness application and therapist activity.

The aims of the rehabilitation will be presented and how



PBWS treadmill training might be used to complement conventional physiotherapy. The equipment used will be described in line with the published guidelines on the selection of PBWS treadmill training systems. PBWS treadmill training can be effective following spinal cord injury, however there are some limitations. This case report highlights the implications for physiotherapy practice and further research.

## REFERENCES

Barbeau H and Visintin M (2003) *Optimal outcomes obtained with body-weight support combined with treadmill training in stroke subjects* Archives of Physical Medicine and Rehabilitation 84, 1458-1465.

Barbeau H and Rossignol S (1987) *Recovery of locomotion after chronic spinalization in the adult cat* Brain Research 412, 84-95.

Behrmann AL and Harkema SJ (2000) *Locomotor training after human spinal cord injury: a series of case studies* Physical Therapy 80, 688-700.

Crompton S, Khemlani M, Batty J, Ada L, Dean C and Katrak P (2001) *Practical issues in retraining walking in severely disabled patients using treadmill and harness support systems* Australian Journal of Physiotherapy 47, 211-213.

Danielsson A and Sunnerhagen KS (2000) *Oxygen consumption during treadmill walking with and without body weight support in patients with hemiparesis after stroke and in healthy subjects* Archives of Physical Medicine and Rehabilitation 81, 953-957.

De Leon RD, Hodgson JA, Roy RR and Edgerton VR (1998) *Locomotor capacity attributable to step training versus spontaneous recovery after spinalization in adult cats* Journal of Neurophysiology, 79, 1329-1340.

Dendy A, Puddy J, Berger S et al (2003) *Guidance for use of a treadmill with bodyweight support for neurological patients at St George's Hospital, London* Synapse Autumn/Winter.

Dobkin BH, Apple D, Barbeau H et al (2003) *Methods for a randomized trial of weight-supported treadmill training versus conventional training for walking*

during inpatient rehabilitation after incomplete traumatic spinal cord injury Neurorehabilitation and Neural Repair 17, 153-167.

Eidelberg E, Walden JG and Nguyen LH (1981) *Locomotor control in macaque monkeys* Brain 104, 647-663.

Felici F, Bernardi M, Rodio A, Marchettoni P, Castellano V and Macaluso A (1997) *Rehabilitation of walking for paraplegic patients by means of a treadmill* Spinal Cord 35, 383-385.

Field-Fote EC and Tepavac D (2002) *Improved intralimb coordination in people with incomplete spinal cord injury following training with body weight support and electrical stimulation* Physical Therapy 82, 707-715.

Finch L, Barbeau H and Arseneault B (1991) *Influence of body weight support on normal human gait: development of a gait retraining strategy* Physical Therapy 71, 842-856.

Fouad K, Metz GAS, Merkler D, Dietz V and Schwab ME (2000) *Treadmill training in incomplete spinal cord injured rats* Behavioural Brain Research 115, 107-113.

Hassid E, Rose D, Commisarow J, Guttry M and Dobkin BH (1997) *Improved gait symmetry in hemiparetic stroke patients induced during body weight-supported treadmill stepping* Journal of Neurologic Rehabilitation 11, 21-26.

Hesse S, Werner C, Paul T, Bardeleben A and Chaler J (2001) *Influence of walking speed on lower limb muscle activity and energy consumption during treadmill walking of hemiparetic patients* Archives of Physical Medicine and Rehabilitation 82, 1547-1550.

Hesse S, Konrad M and Uhlenbrock D (1999) *Treadmill walking with partial body weight support versus floor walking in hemiparetic subjects* Archives of Physical Medicine and Rehabilitation 80, 421-427.

Hesse S, Helm B, Krajnik J, Gregoric M and Mauritz K-H (1997) *Treadmill training with partial body weight support: influence of body weight release on the gait of hemiparetic patients* Journal of Neurologic Rehabilitation 11, 15-20.

Lovely RC, Gregor RJ, Roy RR and Edgerton VR (1986) *Effects of training on the recovery of full-weight-bearing stepping in the adult spinal cat* Experimental Neurology 92, 421-435.

Manning CD and Pomeroy VM (2003) *Effectiveness of treadmill retraining on gait of hemiparetic stroke patients: a systematic review of current evidence* Physiotherapy 89, 337-349.

Page SJ, Levine P, Sisto SA, Bond Q and Johnston MV (2002) *Stroke patients' and therapists' opinions of constraint-induced movement therapy* Clinical Rehabilitation 16, 55-60.

Pomeroy VM and Tallis RC (2003) *Avoiding the menace of evidence-tinged neuro-rehabilitation: Viewpoint* Physiotherapy 89, 595-601.

Protas EJ, Holmes A, Qureshy H, Johnson A, Lee D and Sherwood AM (2001) *Supported treadmill ambulation training after spinal cord injury: a pilot study* Archives of Physical Medicine and Rehabilitation 82, 825-831.

Rose D, Harkema S and Dobkin B (1996) *A comparison of body-weight-supported treadmill walking and overground walking in patients after stroke* Neurology Report 20, 56-60.

Visintin M and Barbeau H (1989) *The effects of body weight support on the locomotor pattern of spastic paretic patients* Canadian Journal of Neuroscience 16, 315-325.

Wernig A, Nannasy A and Müller S (1998) *Maintenance of locomotor*

*abilities following laufband (treadmill) therapy in para- and tetraplegic persons: follow-up studies* Spinal Cord 36, 744-749.

Wernig A and Müller S (1992) *Laufband locomotion with body weight support improved walking in persons with severe spinal cord injuries* Paraplegia 30, 229-238.

Wilson MS, Qureshy H, Protas EJ, Holmes SA, Krouskop TA and Sherwood AM (2000) *Equipment specifications for supported treadmill ambulation training: a technical note* Journal of Rehabilitation Research and Development 37, 415-422.

Wirz M, Colombo G and Dietz V (2001) *Long term effects of locomotor training in spinal humans* Journal of Neurology, Neurosurgery and Psychiatry 71, 93-96.

**Christopher Manning** qualified from The Withington Hospital School of Physiotherapy in 1991 and completed an MSc in Neurorehabilitation from Brunel University in 1999. He has specialised in neurological conditions since 1994, although he did act as physiotherapist to the English Wrestling Team at the 2002 Commonwealth Games in Manchester. He has been involved in the development of the Enfield Stroke Outreach Service and Salford Community Neurorehabilitation Team. Previously Chris worked at Salford University and Salford Primary Care Trust as a Lecturer/Practitioner since 1999 and has recently commenced a full time senior lecturer post at Kingston University and St George's Hospital Medical School. His interests are in Community Rehabilitation, Gait and Lifelong Learning.

## CASE STUDY 3

# FES

Christine Singleton Clinical Specialist, Birmingham

Functional Electrical Stimulation (FES) can be used for the treatment of many neuromuscular or orthopaedic disorders. It is the use of electrical current to obtain controlled activation of the neuromuscular system resulting in movement, sensory response or therapeutic effects. FES can assist those who have difficulty in moving due to damage to their brain or spinal cord as occurs with strokes, head injuries, multiple sclerosis, cerebral palsies and incomplete spinal cord injuries.

FES can be used as either a functional or an exercise tool to increase joint range, muscle bulk, blood flow, gait function, upper limb function and in the reduction of spasticity. It can be used in isolation or in combination with other treatment modalities.

The Odstock Dropped Foot Stimulator (ODFS) is one of the few FES systems in clinical use in the UK. By stimulating the common peroneal nerve it is possible to cause the foot to lift (dorsiflexion) and help the knee and hip to bend. It is timed with walking using a foot switch worn in the shoe. The sensation of the stimulus is like 'pins and needles' which the user becomes used to. The ODFS is about the same size as a pack of playing cards and is worn on a belt or in the pocket. Recent studies have shown that the clinical implementation of the ODFS can improve walking speed and reduce the effort of walking. It also reduces the level of spasticity in the leg and the frequency of tripping. In addition, patients who have had a stroke experience a 'carry-over' effect thus influencing re-education of walking. Patients report an improvement in their quality of life and ability to do more for themselves. To date more than 1000 patients have used the ODFS.

The aim of the talk is to provide an awareness of FES as a treatment modality in gait for patients with neurological disorders.

## REFERENCES

Benson K and Hartz AJ (2000) *A comparison of observational studies and randomized controlled trials* New England Journal of Medicine 342, 1878-86.

Burridge J, Taylor P, Hagan S and Swain I (1997) *Experience of clinical use of the Odstock Dropped Foot Stimulator* Art Organs 21(3), 254-260.

Burridge J, Taylor P, Hagan S, Wood D and Swain I (1997) *The effects of common peroneal nerve stimulation on the effort and speed of walking: A randomised controlled clinical trial with chronic hemiplegic patients* Clinical Rehabilitation 11, 201-210.

Burridge J, Taylor P, Hagan S, Wood D and Swain I (1997) *The effect on the spasticity of the quadriceps muscles of stimulation of the Common Peroneal nerve of chronic hemiplegic subjects during walking* Physiotherapy 83(2).

Burridge J, Swain I and Taylor P (1998) *Functional electrical stimulation: a review of the literature published on common peroneal nerve stimulation for the correction of dropped foot* Reviews in Clinical Gerontology 8, 155-161.

Johnson CA, Tromans AM, Wood DE, O'Keefe D, Buhrs D, Swain I and Burridge J (2001) *A pilot Study to investigate the combined use of Botulinum neurotoxin A (BoNTA) and*



Christine Singleton ended the conference with her case study on FES.

*Functional electrical stimulation (FES), with physiotherapy, in the treatment of spastic dropped foot in subacute stroke* Proc 7th Vienna International Workshop on FES. 172-175.

Finn SM, Mann GE and Taylor PN (2001) *Using Functional Electrical Stimulation (FES) in Parkinson's Disease* Proc 7th Vienna International Workshop on FES. 176-179. For further references see web page [www.salisburyfes.com](http://www.salisburyfes.com)

Intercollegiate working party for stroke (2000) *National clinical guidelines for stroke* London Royal College of Physicians ISBN 1860 161 200.

Liberson W, Holmquest H and Scott M (1961) *Functional electrotherapy: Stimulation of the common peroneal nerve synchronised with the swing phase of gait of hemiplegic subjects* Archives of Physical Medicine and Rehabilitation 42, 202-205.

Taylor P, Burridge J, Wood DE, Norton J, Dunkerly A, Singleton, C and Swain I (1999) *Clinical use of the Odstock Dropped Foot Stimulator – its effect on the speed and effort of walking* Archives of Physical Medicine and Rehabilitation 80, 1577-1583.

Taylor P, Burridge J, Dunkerley AL, Lamb A, Wood DE, Norton JA and Swain I (1999) *Patient's Perceptions of the Odstock Dropped Foot Stimulator (ODFS)* Clinical Rehabilitation 13, 333-340.

Taylor P, Singleton C, Wright P, Mann G, Johnson C and Swain I (2001) *Correction of dropped foot following*

*multiple sclerosis by functional electrical stimulation, an audit of walking speed and physiological cost index* Proc 5th ISPRM conference. Pub Monduzzi Editore S.p.A.

Wade D, Wood V, Hellar A, Maggs J and Langton-Hewer R (1987) *Walking after stroke* Scandinavian Journal of Rehabilitation Medicine 19(1), 25-30.

**Christine Singleton** qualified as a Chartered Physiotherapist in 1982 and is currently a Clinical Specialist (FES) at West Midlands Rehabilitation Centre, a regional tertiary centre within the South Birmingham Primary Care Trust. She graduated with a Masters Degree (Health Science-Research) at Birmingham University in 2000. Christine was elected as a member of the Trust's Professional Executive Committee (PEC) in 2004. She has had a clinical interest in neurology for 20 years and in FES for the last ten years. She has established two FES clinics in Birmingham with over 800 patients assessed to date. She collaborates with a research base in Salisbury and trains/ lectures nationally on FES. Other clinical interests include: Spasticity Management and MS where she is a member of the regional and national working parties for guideline development.

## Reviews articles, books, courses

Reviews of research articles, books and courses in Synapse are offered by Regional ACPIN groups or individuals in response to requests from the ACPIN committee. In the spirit of an extension of the ERA (Evaluating research articles) project they are offered as information for members and as an opportunity for some members to hone their reviewing skills. Editing is kept to a minimum and the reviews reflect the opinions of the authors only. We give the authors of the original book or paper the opportunity to respond. We hope these reviews will encourage members to read the original article and not simply take the views of the reviewers at face value.

### ■ A CONFERENCE ON PARKINSON'S DISEASE – INFORMATION SHARING DAY.

Jill Pearson MCSP and Louise Stewart MCSP.

The Scottish Parkinson's Disease Conference held in spring each year allows a group of interested physiotherapists to gather for discussion of issues related to physiotherapy and Parkinson's Disease (PD). This year we decided that an additional networking day would be to our advantage and this day was held in Perth on 4th November 2003.

- The aims of the day were
- To establish local PD network groups throughout Scotland
- To identify current Assessment and Outcome Measures used by Physiotherapists working with PD
- To give consideration to treatment options for a variety of presenting problems

The day was well attended by physiotherapists from throughout Scotland.

The Parkinson's Disease Society sponsored the day and up-dated us on their current work in Scotland and plans for 2004.

The outcome of our networking day is that six lead contacts have been identified

- Jennifer Robertson – Mansionhouse Unit, Glasgow 0141-201-6146
- Diane Bain – Whyteman's Brae Hospital, Fife 01592-648085
- Louise Stewart – Perth Royal Infirmary

- Nicky Cockburn – Astley Ainslie Hospital, Edinburgh 0131-537-9146
- Heather Gill – County Hospital, Invergordon 01349-852496 ext.2503
- Valerie Redpath – Borders General Hospital 01896-826000

The role of these contacts is to form local networks and to liaise with each other over physiotherapy and PD issues at local and national level.

It was agreed to use our uni-disciplinary time at the Scottish PD Conference in Spring 2004 and to hold a further winter physiotherapy meeting to discuss issues raised. The programme for winter 2004 may include up-date on current PD research, drug management in PD and case presentations.

If you are interested in joining your local network please contact your lead at the numbers above.

### ■ PNF FOR THE NEUROLOGICAL PATIENT

Warwick Hospital  
15th-16th November 2003

Tutor: Nikki Rochford (Lecturer from Keele University)

Course review by **Liz Cohen**, Regional Representative for West Midlands ACPIN committee, Warwick Hospital.

This excellent course was postponed from February 2003 and rescheduled in November 2003. It was still very popular with members and non-members of ACPIN. As expected the course was well subscribed although a lot of the members who had initially applied for the February course could

not make the November dates. This has shown us that there are a lot of people out there who would like to know more about the subject.

Nikki began the first morning with a short lecture/presentation discussing the background behind PNF and research evidence and theory.

The rest of the weekend was essentially practical, supported by short discussions regarding the techniques being practised and their relevance with neurologically impaired individuals. The practical sessions covered patterns of the upper and lower extremities and trunk, head and neck. She then introduced us to specific facilitatory techniques and stimulation, discussing the reasoning behind choice. Nikki then bought in the idea of bilateral and combination techniques that would be of benefit to patients with sensory loss, hemiplegia, trunk weakness and for functional re-education. The weekend was concluded with a problem solving session using example patients, which was extremely helpful in consolidating the amount of work covered in a short time. As course tutor Nikki was very open to discussion and encouraged problem solving throughout the weekend.

In conclusion, this PNF course was run at a very fast pace and covered a lot of ground in one and half days but course members found it very stimulating and were very keen to learn more in the way of PNF. The course members suggested a two-weekend course, days studying specifically lower limbs, upper limbs or trunk.

Nikki was definitely an excellent choice of tutor whose passion for PNF really showed and rubbed off on the course members, if you are reading Nikki, thanks for a great weekend in Warwick.

If you wish to know more about the running of the course please contact Liz Cohen.

## Regional reports

### ■ EAST ANGLIA

Sesa Ishaya

Regional representative

East Anglian ACPIN has continued to grow in our membership. Our committee which has a representative from each major hospital meet four times a year at different locations to share information regarding patient care, eg setting up clinics, patient exercise classes or helping any member who is experiencing problems within their setting. We find this a great way to ensure we are giving the best care possible and stay of top of any new treatment ideas.

We sadly say farewell to our secretary Waldi Ertl who is returning to her native country, Germany. *Auf wiedersehen* and thanks for all your hard work keeping minutes and getting things out to us on time (How does one do that?)

We welcome Tanya Riddlesdell who is currently on MAT leave and will begin her new duties at our AGM. (And how does one do that?)

We had two courses last year, which were successful. At our AGM, Dr Liz Warburton spoke about her work on thrombolysis, a treatment that is available at Addenbrookes. In October an 'On the Ball' course was held at Ipswich Hospital which was widely received. We had far more applicants than spaces.

#### Programme for 2004

- April (one-day course) *Neuroplasticity* Martine Nadler
- May *GBS and AGM* organised by Louse Elliott (Addenbrookes)
- June *Facial course* organized by Lisa Hooper (Addenbrookes)
- October *Outpatient techniques course for neuro patients* organized by Louise Kenworthy

- End of 2004 or beginning of 2005 *Course on MND* organised by Wendy Hendrie and Kate Goddard

All of these courses will be in *Frontline*. Hope to see you there.

And a special thanks to Louise Dunthorne, one of our committee members who is the *Synapse* Administrator. Well Done Louise! How do you do it?!

### ■ LONDON

Sandy Chambers

Regional representative

The last year has been an active and interesting year for the London region. Evening lectures and weekend courses have been stimulating and largely well attended. Membership of the London region is increased again this last year to 248. The London Committee has seen an increased membership as well with enthusiastic links across the region, though new members are always welcome.

Evening lectures from January 2003 have included: 'Epilepsy management and implications for treatment,' Nursing staff NHNN; 'The effect of general training on the effort of walking in clients with MS,' Philippa Carter; 'Brain Tumours', Dr Jeremy Rees; 'PTAs and their role in neurorehab,' Sue Skewis; 'Neurosurgery,' Neil Dorward; 'Management of contractures,' Professor Rushton; 'Disease modifying drugs in MS,' Dr Giovanni; 'Acupuncture and its role in clients with neurological disorders,' Valerie Hopwood; 'Neurogenic pain,' Dr Nandirn and 'Neoparaplastic Syndrome,' Dr Jeremy Rees.

Weekend Study Half-Days included: 'FES and the upper limb', Jane Burridge; 'Diagnostic testing and rehabilitation in clients with vestibular problems,' Jane Harrison & John

Marsden; and 'Research Opportunities: Writing a Case Study,' Fiona Jones. We are looking forward to a productive and interesting year ahead!

#### Programme for 2004

- April 13 (pm) *GBS Support Group* (The National Hospital for Neurology & Neurosurgery)
- May 11 (pm) *Orthotics* Richard Sealy and Paul Charlton (St George's Hospital)
- June 8 (pm). *Connect – The Communication Disability Network* Carol Pound (St Thomas' Hospital)
- September 12 (1 day) *Conversion Disorder* Rachel King and others. (The National Hospital for Neurology & Neurosurgery)
- October 12 (pm) *Cervical Dystonia* Gita Ramdharry and Professor Lees. (The National Hospital for Neurology & Neurosurgery)
- November 9 (pm) *The role of physiotherapy in maintenance of MS patients* Speaker TBA (St Thomas' Hospital)

NB: Please consult *Frontline* ahead of prospective dates to check for last minute changes.

### ■ MANCHESTER

Susan Pattison

Manchester ACPIN Chair

Manchester currently has a membership of 38 from January this year.

#### Programme for 2004

- April *Evidence based practice in soft cast orthotics*
- May *Driving after a Neurological Incident*
- June *Utilising evidence in everyday practice*
- July and September *Drug management in MS and Parkinson's*
- October and November *Exploring hand function - patient demo and workshop*

Our Regional Representative post and Membership Secretary posts are currently vacant.

The Manchester Committee would like to take this opportunity to thank all those involved in the 2003 lectures and in anticipation of all those supporting the 2004 programme. The evaluation forms received gave mainly positive feedback. All the comments have been noted and acted on wherever possible.

Remember, this year, Manchester ACPIN are promoting local talent and knowledge by providing a forum for the display of posters at each evening lecture. The posters may be of a research project, or of a service idea you are particularly proud of. We also welcome any job adverts, requests for information or advice, or other regional communication from our members.

Comments, suggestions and ideas are always welcome.

### ■ MERSEYSIDE

Jo Jones

Regional representative

Merseyside ended it's 2003 programme on a high, with a well attended and well received half-study day on spasticity – many thanks to all those who presented. We were also able to gain invaluable feedback from forms returned by the attendees at the end of the day and will endeavour to incorporate suggestions into future programmes.

Our 2004 Programme began with a thought-provoking presentation by Carole Griffiths on her Masters research study, which explored stroke survivors' experiences of participation in exercise – unfortunately numbers were disappointing. Our AGM in March will be married with a clinical workshop facilitated by Sharon Williams, one not to be missed!

#### Programme for 2004

- 4/5 June *Ataxia Course* Lynne Fletcher
- 21 September *Polyneuropathies Study Day* Half day course. Speakers to be finalised
- 3 November *Vestibular Study Day*



Pam Mulholland (Re-run of oversubscribed course held in June 2003)

Committee membership remains healthy with all posts filled. Regretfully Sarah Bennett has tendered her resignation and we thank her for her commitment over the last few years. We are pleased to welcome Melissa Burton on board – our gain, Manchester's loss! Branch membership totalled 43 at the end of 2003 and stretched as far as Bermuda, we hope to maintain if not improve on this once subscription renewals are complete! As ever, new members, new outlooks, new ideas are always welcome!

## ■ NORTHERN REGION

**Julia Williamson**  
Regional representative

Another packed six months has slipped by. Membership is looking healthy with about sixty on the list at the end of last year. The committee has shrunk a little (in numbers not height) but we are glad to welcome two new members who joined us at our AGM in January. Other Committee posts remain unchanged, Heather Hunter – Chair, Pam Thirlwell – Secretary, Christina Whittenbury – Treasurer.

The CSP has nearly completed the pilot of 'Interactive CSP' the new Internet based communication network. Julia Mackenzie and Heather Hunter have been moderating the site very successfully and it hasn't proven too much of a burden or over stretched their computing skills. This has proven an innovative method of meeting new challenges and demands. Hopefully, the site will be rolled out nationally this year so physiotherapists will be able to communicate across the nation much more easily.

Leaving national developments aside for the moment, we have had another busy six months. We have run hugely successful and reasonably

well attended courses on subjects such as 'Advances in Neuroplasticity', 'The Head and Neck' and 'Botulinum and Spasticity Management.' The perennial favourite 'Introductory Bobath Weekends' made a profit, which allowed us to subsidise more specialist courses and generally keep prices very competitive.

### Programme for 2004

- April 16 & 17th *Manual Techniques for Neuro-Physios* Heather McKibbin (South Tyneside Hospital)
- July 9 & 10 Pam Mulholland, Bobath Tutor (Cumberland Infirmary, Carlisle)
- October TBA *Update on ongoing regional research projects into MS*

Watch out for flyers in your department giving exact details of these courses. You can contact me for details at julia.williamson@nuth.northy.nhs.uk  
Thank you for your support.

## ■ NORTHERN IRELAND

**Siobhan MacAuley**  
Regional representative

The last six months have seen a slight increase in members and quite a few new faces attending our monthly lectures. Our lecture programme tends to follow the academic year from September to June and we have had a few very interesting and stimulating lectures to date covering topics such as an update in neurological research at the University of Ulster, cognitive psychology, and a practical session on normal movement in the upper limb. The year 2004 kicked off with an introduction to Pilates in January, our AGM and Behavioural Strategies for Head Injured Patients.

### Programme for 2004

- April *The Use of Antispasmodics in the Treatment of Multiple Sclerosis* Dr Mc Donnell (Consultant Neurologist BCH)

- May *Conversion disorders* Dr McCarron (Consultant Neurologist Altnagelvin)

The above meetings are generally held on the third Tuesday of the month in the physiotherapy gym of the Belfast city hospital. Flyers will be sent out locally approximately two weeks prior to the lecture.

NIACPIN have decided not to run any weekend courses this year as there have been a lot of courses run by the hospitals, however we do hope to have a few in 2004/5, some are in the pipeline and will be confirmed at a later date.

We have had a few committee changes this year and regrettably have lost two of our dedicated committee members however we wish them all the best for the future, as impending motherhood is the only reason they were allowed to escape!

## ■ OXFORD

**Fiona Cuthbertson**  
Regional Representative

Firstly I would like to extend a big thank you on behalf of the committee to Annabelle Cooper for all of her hard work as regional representative over the past two years. We wish her all the very best in her new life in Cardiff and many congratulations on her engagement!

Our successful 2003 programme came to a close with two very interesting and well attended evenings – Professor Narinder Kapur's talk on 'Memory Aids and Rehabilitation' and Charlie Winwood's practical look at 'Thorax and Rib dysfunction'. Those of us who then decided to brave the January weather were rewarded by a most inspiring talk by Sue Butterworth on the subject of disability, inclusion and equality.

Based on the positive feedback from last year's programme leaflet, we have decided again to circulate a flyer outlining our programme for 2004. We are delighted to welcome

Nicola James and Emma Blair from High Wycombe onto our committee, and their involvement allows us to begin to fulfil our aim of organising lectures in locations other than Oxford and Reading.

### Programme for 2004

- 27 April 7pm AGM *Up to date but not overwhelmed – Applying Evidence to Clinical Practice in Neurological Physiotherapy* Sue Edwards (Seminar Room, Oxford Centre for Enablement)
- 19 May 7pm *Bo.Tox – A Medical Perspective* Dr Matthew Koshi, Neuro Rehab Consultant (Physiotherapy Department, Wycombe Hospital)
- June *Patient Practical/Demo*
- September *Speech and Language Therapy*
- 22 and 23 October *Postural Control and the Upper Limb*. A two day course with Pam Mulholland (Bobath Tutor) (Oxford Centre for Enablement)

Please refer to the branch news notice board section of *Frontline* for more up to date course and lecture details.

If you are interested in becoming a committee member, or have any suggestions for topics or speakers for our 2005 programme then please let any of the committee know or contact Claire Guy on 01865 737372/5.

## ■ SCOTLAND

**Paula Cowan**  
Regional Representative

We are looking forward to an active year for ACPIN. Our membership sits at about 94, which is excellent, but we encourage anyone who has still to renew their membership to do so as soon as possible.

The last six months had a mixed agenda. Courses included a dyspraxia study day that was so well attended that we will need to run again. There was also a brain injury course that was

well received. In January we hosted a lecture on 'gait' with Debbie Strang in Stirling.

### Programme for 2004

- July *Movement Science* with Annie McLuskie (Edinburgh)
- Sept *Dyspraxia* T Jackson and P Halliday (venue TBC)
- Oct *Splinting/casting* with NANOT (Aberdeen)
- TBC -FES
- TBC *Driving assessment*

We have a full and very enthusiastic committee at the moment and Scotland were being praised at the national meeting for being the only region that sends its members news letters! There will be one out soon. Please keep giving ideas or suggestions for future courses. We hope you enjoy the future programme.

## ■ SOUTH TRENT

**Lal Russell**  
Regional Representative

South Trent ACPIN is looking forward to another busy six months ahead. The current membership stands at 46 with two new additions bringing the committee to eight. We have enjoyed well-supported and oversubscribed events over the last six months. Thank-you to Simon Mockett who spoke on the contentious issue (at least it is now!) of spasticity, also Karen Rowland and Steve Hodgson who covered the integrated approach to the management of both the trunk and shoulder over two day courses – these were so well received that they will be running again this year.

### Programme for 2004

- 24 April *An Integrated Approach to the Management of the Shoulder* Karen Rowland and Steve Hodgson (Derby City Hospital)
- 22 May *An Integrated Approach to the Management of the Trunk*
- 19 June *Challenging Balance* Helen Lindfield (Ripley Hospital)

We are always open to suggestions/ requests for topics for either evening lectures or day/weekend courses – feel free to contact us. We are looking forward to this years AGM, a social event – tobogganing (provisionally 18 March) see you there!

## ■ SURREY & BORDERS

**Sally de la Fontaine**  
Regional representative

Our first course was very well received in November and last years evening lectures were generally well attended at various venues across the county. Hopefully, we will have recruited some more committee members at the AGM by the time this appears in *Synapse*, as we have been running now for two years with the same core group and feel we would benefit from some flesh blood!

We are going to distribute a newsletter to share what is happening at a national level this year. This idea was 'borrowed' from the Scottish Branch who have a very active membership in a very challenging geographical area and we wondered if the newsletter might fuel interest in members to join our committee.

We have decided to run more courses this year to hopefully meet our members 'demands' and to raise some more funds for future events.

### Programme for 2004

- 21 April 7pm *Guillain-Barre Syndrome presentation* (The Royal Surrey Hospital, Guildford)
- 22 May *Pilates: Day course* by Helen Collier MCSP, who is a Pilates Instructor (venue in Woking)
- 7 July *Botulinum toxin – benefits to functional recovery in the upper limb, followed by discussion about present services available in the Surrey & Borders area* Case study by Nikki Sherman (St Peters Hospital, Chertsey)
- 30 September & 1st October *Normal Movement module* Anna Hamer (St Peters Hospital, Chertsey)

- September *Lecture from NANOT* topic and venue to be confirmed
- 9 November *NSF on long-term conditions followed by a discussion about the implications of the NSF on Surrey & Borders services* Case study presentation by Brigitt Bailey and Sally de la Fontaine (Venue to be confirmed)

Please consult *Frontline* ahead of prospective dates of events to check for last minute changes.

## ■ SUSSEX

**Margaret Hewitt**  
Regional representative

Membership continues to be steady, although with the start of the Surrey region we may have lost a few members from the borders. We plan to have more links with Kent and Surrey. In October 2003 there was an interesting evening lecture on Huntington's Disease followed by a talk on 'Deep Brain Stimulation', which was quite well attended. In December 2003 we had feedback from the 'Upper Limb' conference as an evening lecture.

For our AGM in February 2004 we had a study day on 'Incomplete Spinal Injuries' by colleagues from Stoke Mandeville, which was well subscribed.

### Programme for 2004

- April *Half Day Workshop on Gymball/ Core Stability* Regine Hill, paediatric Bobath tutor (Conquest Hospital)
- June *Day Course on Treadmill/ Strength Training* (Bexhill Hospital)
- October *Integrated Care Pathway for Hemiplegic Shoulder Pain* Half Day Workshop (Princess Royal Hospital)

## ■ WESSEX

**Helen Foster**  
Regional representative

Wessex Region had a positive finish to 2003 with good feedback from a splinting course by Sue Edwards in Southampton and study day on the

'Role of Physiotherapy with Botulinum Toxin'. 2004 has had a slow start with extremely poor attendance at a joint NANOT and ACPIN cheese and wine evening in January. We are aiming to improve links with Wessex NANOT over 2004.

### Programme for 2004

- 15-17 April *Posture Management* with Pauline Pope and Wendy Murphy (Southampton University)
- May *Falls Research* Dorritt Hindman (Southampton General Hospital)
- 26/27 June *Hydro for Neuro Patients* Jackie Pattman (Salisbury District Hospital)
- July *Orthotics* Paul Charlton (Southampton General Hospital)
- September *Ataxia* (Bournemouth Hospital)
- October *Medical Management for Early Stroke Patients* Dr Duffy (Royal Hampshire County Hospital, Winchester)
- November *Physiotherapy for Early Stroke Patients* H Hobbs (Royal Hampshire County Hospital)

Wessex Regional Committee currently has a vacancy for treasurer as Suzanne Pender has moved out of the area. Thank you to Suzanne for all her hard work. We currently have a strong committee with both Jo Kileff (Chair) and Ros Cox (Committee member) on both the executive and local committees.

We thank all our members who have supported ACPIN this year. Please feedback any suggestions for courses or lectures to Helen Foster (Regional Rep) or Jo Kileff (Wessex Chair).

## ■ WEST MIDLANDS

**Liz Cohen**  
Regional representative

2003 saw a few changes to the West Midlands committee but it remains strong with twelve regular members. Our timetable for study days and courses is booked through to late 2004 with thoughts now being given

to our 2005 programme. Generally courses have been well attended. We are currently seeking volunteers to take up the posts of chair (Helen would like to resign due to commitments), secretary (Zoe, due to long service) and treasurer (Trish, temporarily, due to pregnancy), thanks to all for doing a fantastic job.

Courses over the past few months have included a 'Driving assessment' day in September 2003 aimed at OT's and physio's. This was well received especially with the opportunity to drive an adapted vehicle.

In November 2003 we ran a very practical and enjoyable PNF course with Nikki Rochford (Keele University). She gave everyone the confidence to try it out making the techniques so much more user friendly and giving us another choice in the treatment of neuro patients. We have plans to run similar courses in the future due to popular demand.

Liz Mackay spoke on 'Neuro-physiology and its Relevance to Clinical Practice in the Treatment of the Upper Limb' in February which was followed by our AGM. In March evening lecture speakers were Carron Sintler and Jill Ramsay.

**Programme for 2004**

- 24 April *Conductive Education for Parkinson's Disease* NICE This will include a demonstration group of PD patients (Moseley, Birmingham)
- 17 July *Gym balls* Janice Champion. The date may be changed to the 10 July so please keep your eyes peeled (Heartlands Hospital, Birmingham)
- September *Outpatient Techniques in Neurology* Helen Lindfield (Queen Elizabeth Hospital, Birmingham).
- November *Pilates* Kate Fernyhough (Queen Elizabeth Hospital, Birmingham)

Do you feel a burning ambition to become more involved in the organising of study days and courses in the West Midlands area? If so, why

not become a member of the committee? If this interests you, please contact me. Our next meeting is 23 March 2004. We meet on average once every 8-10 weeks.

We value your support on these courses and your ideas for future events. Any queries, suggestions or interest in joining the committee please contact Liz Cohen on 01926 495321 Bleep 6110 or email lizcohen@ntlworld.com

**■ YORKSHIRE**

**Caroline Brown**  
Regional representative

Yorkshire ACPIN has continued the mix of evening lectures and day courses, which have generally been well attended. This was particularly true for the evening lecture Mary Lynch Ellington presented on 'Strength Training within the Bobath Concept'. Other recent topics have included 'Treatment using the Gymnastic Ball' with Janice Chapman and an Interactive CSP Workshop. We'd like to thank all our speakers from 2003, we appreciate all the work put in.

At the time of writing, most of the 2004 programme is still being finalised but promises to include a wide variety of topics, interesting speakers and some practical based sessions.

Most importantly our AGM is planned for 24 April at Chapel Allerton Hospital, Leeds, with the highlight being a lecture by none other than our President, Ray Tallis. Any of you who have previously heard Ray will know that not many Saturday afternoon activities beat listening to him speak, so we look forward to seeing you there.

Attending is also a great stepping stone for you to leap into becoming more actively involved in your regional ACPIN group by putting yourself forward to become part of the committee. Due to people moving out of the area (including Billie who did a great job as secretary

- we wish her well for the future) we are quite thin on the ground and you could be the answer. Please contact me if you would like any further information.

As always all the details of Yorkshire ACPIN events will be sent to every Yorkshire member and advertised in *Frontline*.

# ADVANCE NOTICE

# Hands

# ON

# NEUROPHYSIOLOGY

**Saturday 13th November 2004  
National Hospital for Neurology and Neurosurgery  
London**

**This one-day course will include clinically relevant aspects of neurophysiology and recent research.**

**Speakers will include:  
Dr Margaret Mayston, Dr Martine Nadler,  
Caroline Alexander, Liz McKay, and Ailie Turton.**

**There will also be a free paper session.**

**Watch *Frontline* for further details**





## Letters

*This letter was received by one of the regional representatives. We felt it would be of interest to ACPIN members, and if anyone knows any more information or resources for the lady concerned, Sally De La Fontaine would be happy to pass the information on, email her at: sallydefontaine@orchidserve.com*

Dear Sally

Firstly let me apologize now for my forwardness in contacting you in this way, as I can appreciate how busy you must be, but as the regional representative of ACPIN I thought you might be interested in this, although I understand that you might not be the right person to receive this, but if you could forward it onto the relevant parties I would be very grateful. I am trying to raise awareness of a debilitating and often unknown condition called Mal de Debarquement Syndrome.

Basically, it is an imbalance or rocking sensation that occurs after getting off a boat or 'debarquement' (debarquement). Once back on dry land the traveller continues to feel 'all at sea', unable to get their land legs back. Although a lot of travellers can identify with this feeling and do actually experience it temporarily after disembarking, unfortunately in the case of MDDS sufferers it can persist for many months, even years afterwards. The symptoms are with you constantly, they never leave, nor can they be alleviated by any anti-motion sickness drugs. 'Like trying to constantly walk on a mattress or trampoline' is a good description of the main symptom, not to mention the others, nausea, gaze instability/visual disturbance, constant tinnitus, I could go on.

As you will have gathered by now I am one such sufferer (two and a half years and counting) ever since I

stepped off a boat in Spain. I'll not bore you with all the details, but it took me over six months to discover just what I had, my GP and ENT Consultant (and neurologist) were baffled, MRI scans, numerous hearing tests/balance tests etc proved negative, just when I thought I was really going mad, I got a reply to an email I had sent to a large vestibular disorder association (VEDA) in America. They told me that although rare, there was in fact a name for my symptoms, imagine my relief in discovering about MdDS. Now I had to set about being diagnosed 'professionally'. Eventually I came across the neuro-otology department at the NHNN in London who had actually seen cases of MdDS. I was finally referred to them in September of 2002, and my 'treatment' there is still ongoing, (Cawthorne-Cooksey exercises) although no improvement to date.

However, what I find most distressing in all of this and what I would love to see change, is the lack of knowledge of the condition here in the UK and, moreover, the lack of research. There is slightly more in America (a dedicated web-site and one doctor's limited research) but again not enough. I understand that it is not life threatening, but it certainly is life debilitating and limiting, and I believe that there must be a great many people out there, particularly women who have a far greater chance of getting MdDS, wondering around either, at best being misdiagnosed (vertigo, menieres, BPV, etc) or, worse, not having any hope of finding out what is wrong with them.

Probably because of my determined 'doggedness' I am one of the few lucky ones who has actually been diagnosed. As there is no miracle cure, raising awareness is crucial in helping sufferers know that it 'isn't all in

their head'. For me it just helps to feel that I am doing something positive by 'spreading the word' and raising its profile. Last summer and now more recently I have had several articles about MdDS printed in various newspapers/women's magazines, so far (sadly) I have had quite a lot of feedback, ranging from wanting to know more about the condition to one lady who appears to have had it, undiagnosed, for six years! Surely this shouldn't happen in today's medically enlightened world?

Finally I am sincerely sorry for my direct approach especially if you are already aware of MdDS, and I have therefore wasted your time, but take heart in knowing that there are very few who do! It's just that ideally I wouldn't want people to go through what I had to before being diagnosed. Anyway thank you for taking the time and trouble to read this. It is certainly not sympathy that I am after but, awareness of this horrible condition and ultimately a cure.

Kind regards  
Mrs Jane Houghton  
Cheshire

## Guidelines for authors

*Synapse* is the official newsletter of ACPIN. It aims to provide a channel of communication between ACPIN members, to provide a forum to inform, instruct and debate regarding all aspects of neurological physiotherapy. A number of types of articles have been identified which fulfil these aims. The types of article are:

### ■ CASE REPORTS

*Synapse* is pleased to accept case reports from practitioners, that provide information which will encourage other practitioners to improve or make changes in their own practice or clinical reasoning of how to influence a change or plan a treatment for that condition. The maximum length is 2000 words including references. An outline is given as follows:

#### Introduction

State the purpose of the report and why the case is worth reading about to include in short sentences:

- The patient and the condition.
- How the case came to your attention.
- What is new or different about it.
- The main features worth reporting.

#### The patient

Give a concise description of the patient and condition that shows the key physiotherapeutic, biomedical and psychosocial features. The patient's perspective on the problem and priorities for treatment are important. Give the patient a name in the interests of humanity, but not the real name. Do not include any other identifying details or photographs without the patient's permission.

#### Intervention

Describe what you did, how the patient progressed, and the outcome. This section should cover:

- Aims of physiotherapy.
- Treatment, problems and progress.
- Outcomes, including any changes in impairment and disability.
- Justification of your choice of treatment; clinical reasoning
- The patient's level of satisfaction and the outcome and the impact on quality of life.

#### Method

This should clarify what intervention took place and what measurements were taken. It should include:

- Description(s) of outcome measures used and reference
- Interventions carried out (where, when, by whom if relevant)

#### Implications for practice

Discuss the knowledge gained, with reference to published research findings and/or evidence about clinical effectiveness. For example:

- Outcome for the patient.
- Drawbacks.
- Insights for treatment of similar patients.
- Potential for application to other conditions.

#### Summary

List the main lessons to be drawn from this example.

#### References

These should be in the Harvard style (see section on 'Measurements' below).

Further guidelines for writing case reports were published in the Spring 2001 issue of *Synapse*, page 19.

### ■ ABSTRACTS OF THESIS AND DISSERTATIONS

Abstracts from research projects, including those from undergraduate or postgraduate degrees, audits or presentations. They should be up to 500 words and where possible the conventional format: introduction, purpose, method, results, discussion, conclusion.

### ■ AUDIT REPORT

A report which contains examination of the method, results, analysis, conclusions and service developments of audit relating to neurology and physiotherapy, using any method or design. This could also include a Service Development Quality Assurance Report of changes in service delivery aimed at improving quality. These should be up to 2000 words including references.

### ■ REVIEW OF ARTICLES

A critical appraisal of primary source material on a specific topic related to neurology. Download the ACPIN information sheet Reviewing research articles for further guidance from the ACPIN website.

### ■ PRODUCT NEWS

A short appraisal of up to 500 words, used to bring new or redesigned equipment to the notice of the readers. ACPIN and *Synapse* take no responsibility for these assessments, it is not an endorsement of the equipment. If an official trial has been carried out this should be presented as a technical evaluation. This may include a description of a mechanical or technical device used in assessment, treatment, management or education to include specifications and summary evaluation.

### ■ REVIEW OF BOOKS, SOFTWARE AND VIDEOS

Short reviews of up to 500 words to include details of availability, price and source for purchasing.

### ■ LETTERS TO SYNAPSE

These can be about any issue pertinent to neurological physiotherapy or ACPIN. They may relate to material published in the previous issue(s) of *Synapse*.

### ■ PREPARATION OF EDITORIAL MATERIAL

Copy should be produced in Microsoft Word. Wherever possible diagrams and tables should be produced in electronic form, eg Excel, and the software used clearly identified.

Hard copies should be as close to journal style as possible, on one side of A4 paper with at least a 25mm margin all around, consecutively numbered.

The first page should give:

- The title of the article
- The names of the author(s)
- A complete name and address for correspondence
- Professional and academic qualifications for all authors, and their current positions
- For research papers, a brief note about each author which indicates their contribution and a summary of any funds supporting the work

#### All articles

- The text should be well organised and written in simple, clear correct English. The positions of tables, charts or photographs should be appropriately titled and numbered consecutively in the text.
- All abbreviations must be explained.
- Any photographs or line drawings should be in sharp focus with good contrast for best reproduction.
- All charts should be in black and white only and captions should reflect this.
- References should be listed alphabetically, in the Harvard style with punctuation as follows: Bloggs A, Collins B (1998) The use of bandages in treating head injuries *Physiotherapy* 67,3 pp12-13.
- In the text, the reference should be quoted as the author(s) names followed by the date: Bloggs A (1994)
- Acknowledgements are listed at the end.

#### Measurements

As the International System of Units (SI) is not yet universal, both metric and imperial units are used in the United Kingdom in different circumstances. Depending on which units were used for the original calculations, data may be reported in imperial units followed by the SI equivalent in parentheses, or SI measurements followed by imperial

measurements in parentheses. If the article mentions an outcome measure, appropriate information about it should be included, describing measurement properties and where it may be obtained.

#### Permissions and ethical certification

Protection of subjects: Either provide written permission from patients, parents or guardians to publish photographs of recognisable individuals, or obscure facial features. For reports of research involving people, written confirmation of informed consent is required. The use of names for patients is encouraged in case studies for clarity and humanity, but they should not be their real names.

#### Submission of articles

The disk and two hard copies of each article, should be sent with a covering letter from the principal author stating the type of article being submitted, releasing copyright, confirming that appropriate permissions have been obtained, or stating what reprinting permissions are needed.

For further information, please contact the *Synapse* co-ordinator:

Louise Dunthorne  
24 Warren Heath Avenue  
Ipswich  
Suffolk  
01473 704150

Note: all material submitted to the administrator is normally acknowledged within two weeks of receipt.

**The Editorial Board reserves the right to edit all material submitted. Likewise, the views expressed in this journal are not necessarily those of the Editorial Board, nor of ACPIN. Inclusion of any advertising matter in this journal does not necessarily imply endorsement of the advertised product by ACPIN.**

**Whilst every care is taken to ensure that the data published herein is accurate, neither ACPIN nor the publisher can accept responsibility for any omissions or inaccuracies appearing or for any consequences arising therefrom.**

**ACPIN and the publisher do not sponsor nor otherwise support any substance, commodity, process, equipment, organisation or service in this publication.**

## Regional representatives

### ■ EAST ANGLIA

**Sesa Ishaya**  
e: airavatesesa@yahoo.com

### ■ KENT

**Lisa White**

### ■ LONDON

**Sandy Chambers**  
Physiotherapy Department  
St Thomas' Hospital  
Lambeth Palace Road  
London SE1 7EH  
t: 020 7928 9292 ext 3590  
e: Sandra.Chambers@gstt.sthames.nhs.uk

### ■ MANCHESTER

**Louise Rogerson**  
(temporary acting)  
e: fizzyeau@aol.com

### ■ MERSEYSIDE

**Jo Jones**  
t: 0151 282 6000 ext 6098

### ■ NORTHAMPTON

**Sarah Littlewood**  
Royal Leamington Spa  
Rehabilitation Hospital  
Heathcote Lane  
Warwick  
e: SarahLittlewood@hotmail.com

### ■ NORTHERN

**Julia Williamson**  
e: jules.claravale@virgin.net

### ■ NORTHERN IRELAND

**Siobhan Macauley**  
Physiotherapy Department  
Belfast City Hospital  
Lisburn Road  
Belfast  
t: 028 9032 9241 ext 2545  
e: siobhanmacauley@bch.ni-nhs.uk

### ■ NORTH TRENT

**Alison Clark**  
(temporary acting)  
t: 0114 2630872

### ■ OXFORD

**Fiona Cuthbertson**  
e: fcuthbertson24@hotmail.com

### ■ SCOTLAND

**Paula Cowan**  
Physiotherapy Department  
Department of Clinical  
Neurosciences  
Western General Hospital  
Crewe Road  
Edinburgh  
Scotland EU4 2XU  
e: sandpcowan@yahoo.co.uk

### ■ SOUTH TRENT

**Elizabeth Russell**  
Physiotherapy Department  
Stroke Unit  
Nottingham City Hospital  
Hucknall Road  
Nottingham  
e: lrusell1@ncht.trent.nhs.uk

### ■ SOUTH WEST

**Kirsten Cheadle**  
The Royal United Hospital  
Physiotherapy Department  
Coombe Park  
Bath BA1 3NG  
e: kirsten.cheadle@ruh-bath.swest.nhs.uk

### ■ SURREY & BORDERS

**Sally de la Fontaine**  
e: sallydelafontaine@orchidserve.com

### ■ SUSSEX

**Margaret Hewett**  
(temporary acting)  
e: mhewett70@hotmail.com

### ■ WESSEX

**Helen Foster**  
e: jon.foster@veritas.com

### ■ WEST MIDLANDS

**Liz Cohen**  
Physiotherapy Department  
South Warwickshire General Hospital  
Laken Road  
Warwick  
CV34 5BJ  
t: 0192 649 5321 pager 6110  
e: Lizcohen@ntlworld.com

### ■ YORKSHIRE

**Caroline Brown**  
Physiotherapy Department  
Neuroscience Unit  
York District Hospital  
Wigginton Road  
York YO31 8HE  
t: 01904 725747  
e: cazzabelle@hotmail.com

**Syn'apse**

**Administrator**  
Louise Dunthorne

**Editorial Advisory Committee**  
Members of ACPIN executive and  
national committees as required.

**Design**  
kwgraphicdesign  
t & f: 44 (0) 1395 263677  
e: kw@kwgraphicdesign.co.uk

**Printers**  
MF Barnwell & Sons, Norwich

**Address for correspondence**  
Louise Dunthorne  
Synapse Administrator  
24 Warren Heath Avenue  
Ipswich  
Suffolk  
e: louise@peterdunthorne.com  
t: 44 (0)1473 712587