

Autumn/Winter 2009

Syn'apse

- ▶ **Midline orientation of the head – does achieving this improve ability to maintain unsupported sitting in the stroke patient?**
- ▶ **Elective spinal patients – the implementation of weekend physiotherapy at Kings College Hospital**
- ▶ **Late stage physiotherapy – rehabilitation following severe traumatic brain injury – a case report exploring a client with severe physical impairments four years post injury**



www.acpin.net

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.

CONTENTS

From the Chairs	2
President's address	3
Article 1 Midline orientation of the head – does achieving this improve ability to maintain unsupported sitting in the stroke patient?	5
Article 2 Elective spinal patients – the implementation of weekend physiotherapy at Kings College Hospital	10
Article 3 Late stage physiotherapy– rehabilitation following severe traumatic brain injury – a case report exploring a client with severe physical impairments four years post injury	13
Articles in other journals	19
Sharing good practice Response from BBTA and MRP to article 'What do student physiotherapists perceive the Bobath concept and Motor Relearning Programme to be and do they feel confident to use these approaches in stroke rehabilitation?' (Pinguet & Levis)	22
ACPIN news	26
General news	27
ACPIN @ Congress 2009 Abstracts and speaker biographies	28
Five minutes with... Louise Ada	33
Focus on... Wales	34
Reviews COURSE: Are the arms and legs connected during locomotion? COURSE: Welsh Stroke conference 2009 COURSE: Classic pilates clinical application for neurological patients COURSE: Outcome measures study day	37 37 38 38
Regional reports	39
Guidelines for authors	43
Regional representatives	44

Current Executive Committee

President

Margaret Mayston
m.mayston@ucl.ac.uk

Honorary chairs

Cherry Kilbride
Cherry.kilbride@brunel.ac.uk

Jo Tuckey
jotuckey@aol.com

Vice chair

Siobhan MacAuley
neurophysio@btinternet.com

Honorary treasurer

Jo Kileff
joandivan@kileff.co.uk

Honorary secretary

Anne Rodger
Anne.rodger@hotmail.co.uk

Honorary research officer

Julia Williamson
Julia.Williamson@nuth.northy.nhs.uk

Honorary membership officer

Sandy Chambers
membsec@acpin.org

Honorary minutes secretary

Louise Rogerson
neurophysio@hotmail.co.uk

Honorary PRO

Adine Adonis
Adine.adonis@imperial.nhs.uk

CIG liaison representative

Gita Ramdharry
g.ramdharry@sgul.kingston.ac.uk

Synapse coordinator

Louise Dunthorne
louisedunthorne@tiscali.co.uk

Diversity officer

Jakko Brouwers
Jakko.brouwers@cardiffandvale.wales.nhs.uk

Committee member

Lorraine Azam
lorrainepetre@hotmail.com

Committee member

Chris Manning
cmanning@hscs.sghms.ac.uk

Committee member

Emma Procter
emma.procter@sth.nhs.uk

FROM THE CHAIRS

Welcome to Synapse Autumn 2009!

We hope you will find this edition an interesting and useful read; it may be just what you need as we move into the long nights of winter following our long hot BBQ summer!

It seems like only yesterday that we were putting finger to keyboard to write for the spring edition, but they say time flies when you are enjoying yourself; we can't believe that this is our penultimate 'From the Chairs' and that come March 2010 we will be handing over the 'Chairship' to our very capable and experienced Vice chair Siobhan MacAuley. As our President Dr Margaret Mayston will have been in post for a year by then we are very confident that we won't be missed at all! Don't worry we will save our reminiscing until the next edition of *Synapse*, bet you can't wait!

Siobhan has also been our ACPIN CSP Congress link person for the last couple of years and yet again she has done another marvellous job and we hope you agree that the Liverpool programme was excellent. As always the standard and content of presentations was very high, and ACPIN were delighted to have been able to start the proceedings off with such an eminent neurological physiotherapist as Professor Louise Ada. A big thank you to all our speakers!

ACPIN has been busy on many fronts since the last *Synapse*; one of these has been the eagerly awaited splinting guidelines. Don't get too excited as we are in the very early stages but definite progress has been made! Firstly ACPIN has joined forces with the specialist neuro section of the College of OTs with the aim of producing a document that is fit for purpose across the professions. Many of you will have already participated in our stakeholder engagement exercise by filling in the Survey Monkey questionnaire about where we are currently with splinting – thank you to all who have done this as it constitutes one of the steps of the formal

process of guideline development stipulated by the CSP. We hope to report the initial findings of the survey in the next *Synapse*. As you can see from this edition (and previous) ACPIN has also been involved in the development of other guidance. Bhanu Ramaswamy has yet again comes up trumps with her work with the Parkinson's Disease Society to name but one area. Promoting and contributing towards evidence informed physiotherapy practice remains a key strand of ACPIN.

ACPIN have also joined forces with the CSP and the Move for Health exercise agenda. Chris Manning has kindly stepped forward to be ACPIN's Move for Health champion and we look forward to seeing him lead by example! The importance of exercise for all is reflected in the 2010 ACPIN Conference and AGM (again in our second home at the Northampton Hilton) on the 19th and 20th March and titled 'Fit for Life? Exercise and Neurology'. Please see the advert in this edition and of course visit our website on www.acpin.net where you can also download an application form.

Well that seems more than enough from us, and it just leaves us to say "Hope to see you all in Glasgow for the UK Stroke Forum" – do come and join us in December to round off another great year for ACPIN.

Jo and Cherry

PRESIDENT'S ADDRESS

Money makes the world go 'round

Margaret Mayston AM FCSP PhD

Do you remember that song recorded by Liza Minnelli – I think it was from the musical *Cabaret*?

The relevance of this comes later. As I write this, the London ACPIN group are about to hold their annual wine and cheese evening, and in a few weeks the CSP congress in Liverpool will take place. ACPIN as usual have an exciting programme set up with an international speaker, Professor Louise Ada from Sydney, Australia, who I am really looking forward to hearing and meeting again. Both these events are examples of the hard work that takes place to ensure that ACPIN members are well rewarded for their membership.

Since taking on the role of President in March this year, I have been introduced to the behind the scenes workings of the ACPIN executive and regional representatives. This dynamic group of people do an astonishing job in driving neurological physiotherapy forwards and working to provide the membership with high quality continuing education and support.

I have just spent this afternoon trying to get the new software working for a practical session on the Hoffmann reflex (H-reflex), which we do with our second year undergraduates in biosciences at University College London (UCL). Most of you will know what it is – the electrically elicited reflex which is the analogue of the stretch reflex. The H-reflex provides a way to examine the excitability of the alpha motoneurone and the circuitry of the stretch reflex while bypassing the muscle

spindle. It is a commonly used tool in neurophysiological research of spinal control mechanisms, including the study of spasticity. The UCL system has been running on DOS (most of you will be too young to know what this is), and I decided it was high time to get it into the 21st century and able to be run using *Windows*. I have had to do this with no budget allowance – relying on a few people's good will and some creative side-stepping. As I was completing this task, I was also wondering about what I would have to say in this edition of *Synapse*. The shoe-string way of updating this software led me to consider the current financial crisis and the implications of this for health workers.

Times are tough everywhere, services are being cut, budgets are being slashed, particularly in education and the health service. For example, UCL has become very IT minded and I now have to print out my own payslip if I want one! This saves them the cost of printing and distributing the said document. Only yesterday it was reported in the *The Daily Telegraph* (not my usual paper) that the national debt is at a staggering £1.4 trillion – it is hard to imagine what that really looks like. The article went on to say that the current government will have to make hard choices on public spending and that the NHS will be included in the drive to make savings. Even the Tories have indicated that if they come to power they will cut the NHS budget even more severely than the current Labour Government – who will not in any case give us their plan for health

beyond 2010–2011 (*The Daily Telegraph*, 9th September 2009). Cuts, cuts, cuts – that is all we hear.

What does this mean for the neurophysiotherapy services within the NHS system, indeed for all health provision, and what will it mean for the clients who need our services? In particular, services for people with neurological disabilities, especially those with a chronic disability, seem to get a raw deal. How far have we really progressed with what we offer to our neurological patients? In comparison to those who require care for cancer, the neurological patient seems like the poor relative. Huge resources have been poured into cancer care and research – of course it is an emotive life/death issue and as such attracts attention and vast financial support. I am reminded of a comment in an editorial by Dromerick (2003), who stated that patients do not die from bad rehabilitation as they might from ineffective drugs or poor surgical techniques and as such there is less urgency to research the best way of dealing with it. I am not saying that neurophysiotherapists are providing a bad service, what we lack is sufficient resources to give a better one. When a patient with a chronic neurological disability is admitted to a London teaching hospital medical ward with an infection but receives no therapy for his neurological disability and ends up unable to walk after a three week inpatient stay one has to stop and ask what is going on here. Is the medical profession only responsible for treating the primary impairment, or might there be a person who

requires some kind of integrated service based on need. Seems some creativity might help in this situation – or might it even be a good dose of common sense?

I can see two issues. The first is that there will need to be a great deal of creativity in the way that services are provided as there will no doubt be constraints on what can be offered in comparison with the current provision. Secondly, there will be a greater need for us to justify what we do with our clients and for how long we provide a service. This means that we need to be keeping up to date with current developments, evaluating what we do and as much as possible referring to available evidence and knowledge to support our clinical reasoning.

In my inaugural address I talked about the six hats of deBono. This time I will mention his latest book titled *Think! Before It's Too Late* (De Bono, 2009). He says that you 'can analyse the past, but you must design the future' (Chapter 3). There has been much discussion in recent times in the journals and on iCSP about best practice in neurophysiotherapy – to Bobath or not to Bobath, to provide hands on or only allow hands-off intervention, we must only implement evidence based practice with clients, etc... I am rather tired of it. There can be many complex descriptions and theories, but in the end, what practical difference do they make? What can we offer to our clients which will result in the best practical outcome for them? De Bono says that design is fundamental to everyone's thinking.



The University of Nottingham

Introducing a new Masters degree course!

MSc in Physiotherapy (Neurorehabilitation) at the University of Nottingham

This Masters degree course aims to provide students with specialist and up to date knowledge in neurorehabilitation. The course consists of the specialist neurorehabilitation modules below (**these can be taken as stand alone individual modules, outside the Masters programme**), a project dissertation on a topic in neurorehabilitation and flexible choice of modules from the Masters programme including research methodology, evidence for health and social care and clinical reasoning.

The new **Innovations in Neurological Rehabilitation** module (30 credits) is an opportunity to develop specialist expertise in several diverse areas of neurological physiotherapy including three areas related to stroke: balance/posture, reach-to-grasp and sensory impairment; and an area related to cerebral palsy: rehabilitation of gait. This module is delivered by a team with substantial expertise and research publications in these areas. Students will learn about the latest research findings and will learn first-hand how to use new innovative technology and movement analysis measures in our state of the art human performance laboratory, improving their knowledge of the biomechanics of movement and research methods on the way.

Our popular **Movement science approach to stroke rehabilitation** module (30 credits) is the most substantial postgraduate course on this topic in the UK, has been running now for eight years and is taught by tutors experienced in the application of this intervention. The course comprises a modern interpretation of the Motor Relearning Programme in addition to application of other individual evidence-based treatments. It examines and illustrates the application of a movement science based approach to the analysis and training of the motor performance of neurological patients (numerous clinical sessions included). Topics include:

- Normal and abnormal biomechanics and motor control of functional movements.
- Strategies for retraining motor performance
- Facilitation of motor skills acquisition
- Causes of decreased force production and changes in muscle tone
- Prevention of secondary musculoskeletal changes
- Self-monitored practice
- Measurement of motor performance
- Strength and cardiovascular fitness following stroke

Module convenors: Paulette van Vliet & Marjan Blackburn

For further information, including dates and fees, and application forms for either individual modules or the MSc Physiotherapy (Neurorehabilitation) contact: lisa.james@nottingham.ac.uk.

For information concerning content of modules, contact: marjan.blackburn@nottingham.ac.uk or p.van-vliet@nottingham.ac.uk

Postgraduate Course Secretary, Division of Physiotherapy Education,
Clinical Sciences Building, City Hospital Campus, Hucknall Road,
Nottingham NG5 1PB Tel: 0115 82 31797, fax 82 31791
e-mail: lisa.james@nottingham.ac.uk

We need to put together what we have in order to deliver the values we want. We all want to deliver best practice – what is the best way to design that? It might mean that we need to take a blank sheet, then draw on our knowledge, experiential evidence, clinical expertise, client preference and goals, work out what financial and human resources we have, and design a service which takes all of these into account.

Rather than being concerned about what approach we might use, we will continue to focus on the client and their needs and goals. Given the financial constraints, creativity will come to the fore; what about group work, self practice, accessing other resources like the fitness centre and leisure activities. We can put on the six hats and creatively find a way forwards despite the pending cuts. It could even be quite exciting as new and different ways are found to progress in these demanding and

challenging times.

Within this context you can also rely on ACPIN to continue its high quality programme and support. This requires contribution in time and creativity from all of its members in addition to that of the incredibly hard working committed group which form the executive and regional representatives. Progress will result from creativity and design – let's have a melting pot of ideas and an explosion of constructive design!

REFERENCES

De Bono E (2009) *Think! Before its Too Late* Vermilion.

Dromerick AW (2003) *Evidence-based rehabilitation: The case for and against constraint induced therapy* Journal of Rehabilitation, Research & Development 40 (1) ppvii-ix.

Midline orientation of the head

does achieving this improve ability to maintain unsupported sitting in the stroke patient?

Emily McGough BSc (HONS) Team Leader Physiotherapist in Acute Neurosciences, University Hospital of Wales

The ability to sit unsupported is crucial to independence as it frees the upper limbs for functional tasks. Following a cerebrovascular accident (CVA) or stroke, the ability to remain balanced whilst sitting is often impaired (Carr and Shepherd 2004, Nieuwboer et al 1995). Therefore, regaining independent sitting balance is a common rehabilitation goal (Harley et al 2006). As many of the sensory inputs required for postural control originate in the head and neck, it has been suggested that head position and orientation can affect the ability to balance (Barberini and Macpherson 1998, DiFabio and Emasithi 1997). The aim of this study is to investigate whether improving head orientation will lead to improvements in sitting posture and balance in stroke patients.

LITERATURE REVIEW AND NEUROPHYSIOLOGY

To balance and interact with the environment humans need an accurate internal representation or 'body schema'. This involves awareness of where body segments are in relation to one another, where the body is positioned within the environment, and awareness of vertical orientation and the effect of gravity (DiFabio and Emasithi 1997). Having an intact 'body schema' is the basis of postural control which will allow the necessary postural adjustments for control of body position and movement within the environment.

There are three main sensory modalities the human body uses in postural control. These are vision, the vestibular apparatus, and somatosensory information (Vuillerme et al 2005, Ivanenko et al 1999, Kavounoudias et al 1999).

Vision provides the body with information about the environment and orientation within the environment. The importance of vision in the control of balance is well documented (Wade and Jones

1997) When visual input is altered, standing humans have demonstrated increased postural sway (summarised in Wade and Jones 1997 and Schmidt and Lee 1999).

The vestibular apparatus provide the body with information about head orientation in space with respect to gravity, and also directional movement through space (DiFabio and Emasithi 1997 and Schmidt and Lee 1999). Under experimental conditions it has been shown to influence postural control when artificial stimulation was applied to the vestibular system in standing adults. The stimulation resulted in the body perceiving a movement and therefore producing a compensatory postural reaction in an attempt to restore equilibrium (Ivanenko et al 1999).

Somatosensory information from all over the body is used in postural control (Jeka 1997). In the literature (Kavounoudias et al 1999), much attention has been given to the role of proprioceptive information in postural control which provides the central nervous system (CNS) with information about the position of body parts and their relationship with one another. Particularly the neck has been focused on as an important source of proprioceptive information as the muscles and joints in the cervical region have a large density of proprioceptors, thought to provide the body with information on head position (Strupp et al 1998). Numerous studies have demonstrated postural responses to altered neck muscle proprioception, either by vibration or fatigue of the neck muscles (De Nunzio et al, 2005, Ivanenko et al 1999, Kavounoudias et al, 1999 and Vuillerme et al 2005). These studies all had small subject groups, reducing their individual validity. However, as they produced the same trend in results this gives their results concurrent validity.

Information from all three sensory systems is integrated within the CNS to provide accurate information of body position in space and allow

postural responses for the maintenance of balance. What, then, is the effect of an impairment of one of these sensory systems? Altered sensory input from the neck as a result of trauma or pain has been shown to impair postural control and alter the perception of verticality in randomised controlled trials (Kogler *et al* 2000 and Grod and Diakow 2002). However, when visual and vestibular inputs are intact, these can compensate for the reduced proprioceptive input to give an adequate representation of body position in space. For example, Bove *et al* (2004) demonstrated a reduced sensitivity to neck muscle vibration in patients with cervical dystonia when compared to controls and hypothesise that these patients use vision, vestibular input and proprioceptive input from the trunk and paraspinal muscles to provide them with postural orientation in the absence of accurate neck proprioception. Similarly, when vestibular input is impaired, for example in those with vestibular neuritis, increased postural response to neck muscle vibration has been demonstrated showing the increased importance of neck proprioceptive information when vestibular information is impaired (Strupp *et al* 1998).

Different head positions will not only result in altered proprioceptive information from the head and neck, but also altered visual and vestibular input as the eyes and vestibular apparatus are both sited in the head. Generally the intact CNS should be able to compute the effects of altered sensory inputs with a change in head position to maintain postural equilibrium. Barberini and Macpherson (1998) found that in standing cats, changes in head position did not affect the efficacy of the postural response for maintaining equilibrium. However as this research evaluates cats one cannot presume that the results would be the same in humans.

The evidence so far is not conclusive regarding the effect of head position on postural control in humans. In a small study, Knox and Hodges (2005) demonstrated reduced accuracy of elbow joint position sense in young adults with end range positions of the head and neck. They hypothesise that this may be due to disrupted organisation of the proprioceptive information from the change in head position. However the authors only looked at one joint movement and have a small sample size, so caution with interpretation must be exercised.

While much research has investigated the importance of sensory inputs to postural control, this research has been carried out in young adults who are healthy and when they are standing. Very little is known about how sensory information is integrated within the CNS to produce postural

responses, and there were no studies investigating the effect of altered sensory inputs or changes in head position on maintenance of sitting balance. So, what does the research show about postural control in seated stroke patients, where more than one sensory input can be impaired?

Sitting is often affected following stroke, causing patients to lean either to the left or to the right. Taylor *et al* (1994) studied 38 patients following stroke and found that only 16 were able to sit in midline after one week. Harley *et al* (2006) also demonstrated reduced postural control in seated stroke patients compared to controls.

Several authors have investigated possible causes of this impaired sitting balance. One commonly cited explanation is that some patients following stroke have an altered perception of the vertical or 'subjective visual vertical' (SVV) (Yelnik *et al* 2002, Snowden and Scott 2005 and Brandt *et al* 1994). Brandt *et al* (1994) studied 52 patients with middle cerebral infarcts and found that 23 had an altered SVV. These 23 patients were found to have infarcts involving the parietal insular, which is an area which responds to vestibular stimulation. The authors suggest that this area may be responsible for integration of proprioceptive, visual and vestibular inputs to produce representation of vertical.

Snowden and Scott (2005) found no direct correlation between size of disturbed SVV and disturbed body posture in sitting. However, they did find that if trunk lean was present it was always in the same direction as the perceived vertical. This is supported by research by Yelnik *et al* (2002) who also found the subjective visual vertical was altered in stroke patients compared to controls when the head was tilted 20 degrees to the non-hemiplegic side. They suggest that some of the perception of vertical may be mediated by stretching of the somatosensory receptors of the neck. Perennou *et al* (1998) found improved ability to sit on a laterally tilting platform in hemiplegic patients when TENS was applied to the neck muscles. These two studies suggest that neck muscles could be an important source of sensory feedback in sitting in the stroke population.

Within stroke rehabilitation literature much emphasis is placed on the importance of gaining active, selective trunk control when working on sitting balance (Carr and Shepherd 2004, Davies 1985 and Mudie *et al* 2002). However, despite the recent influx of information on the importance of neck proprioceptors to postural control, no specific studies directly examining the effect of head position and orientation on balance in the stroke population were found. Davies (1985) emphasises the importance of restoring movements of the

head, and Di Fabio and Emasithi (1997) hypothesise that therapy aimed at improving head control may improve postural responses. This is not yet supported by research.

MR A

Mr A is an 81 year old male who collapsed at home. A CT scan a day later showed lacunar infarcts in both basal ganglia. Mr A also had an MRI scan which showed a left sided infarct in the posterior medulla. He was transferred to the stroke unit 20 days later for rehabilitation.

On assessment, Mr A was found to have full active movement of all limbs with ataxia and a mild weakness on the left. He had an asymmetrical sitting posture with increased weight-bearing through the left hip and a feeling of being 'off balance' when positioned in midline. He used his upper limbs for support in sitting, limiting functional abilities. He also demonstrated reduced range of movement in the neck associated with pain. He sat with the head held in right side flexion. It was hypothesised by medical staff he had a whiplash-type injury from his collapse. *Figure 1* demonstrates initial sitting posture.

TREATMENT STRATEGIES

Active and assisted neck stretches in sitting

Mr A had lost neck range of movement in all directions, especially into left side flexion due to tight, overactive trapezius and scalene muscles on the

right. Scapular muscle fatigue has been shown to decrease postural control (Vuillerme *et al* 2004) and body leanings were found after strong isometric contraction of neck muscles (Duclos *et al* 2004). It was hoped that by decreasing the activity of the overactive trapezius and scalene muscles, improved postural control would result. Treatment therefore involved active eccentric lengthening of the right neck side flexors with facilitation when the head was positioned in left side flexion.

Active and passive neck stretches were carried out in all directions, with gentle manual pressure at end of range to improve range of movement and increase the proprioceptive input from the neck muscles and joints. It was hoped that this would also result in reduced neck pain which has been shown to affect perception of vertical (Grod and Diakow 2002).

Independent Exercises

To ensure carryover between treatment sessions Mr A was given neck exercises to do independently.

Visual Feedback

A mirror was used in activities both in sitting and standing. Exercises and stretches were carried out with the patient's eyes closed. He would intermittently check his posture in the mirror to see if he had achieved midline. Bonan *et al* (2004) hypothesise that by removing vision during treatment you allow improved awareness of somatosensory and vestibular inputs.

Weight transference activities

Davies (1985) emphasises the importance of practicing activities aimed at transferring weight sideways to improve balance. As Mr A was unable to maintain balance when weight was transferred to the right, functional activities such as reaching for objects on the right side were facilitated to try and retrain balance.

Outcome measures

1. Analysis of posture in sitting is difficult. Nieuwboer *et al* (1995) demonstrated low inter-rater reliability for visual analysis of posture. This is concurred by Carr *et al* (1999). In the absence of other ways to evaluate trunk and head posture, visual analysis was used in the form of photographs.

2. A balance performance monitor (BPM) was used to measure weight distribution in unsupported sitting. These are thought to have reasonable validity for this purpose (Mudie *et al* 2002 and Harley *et al* 2006).

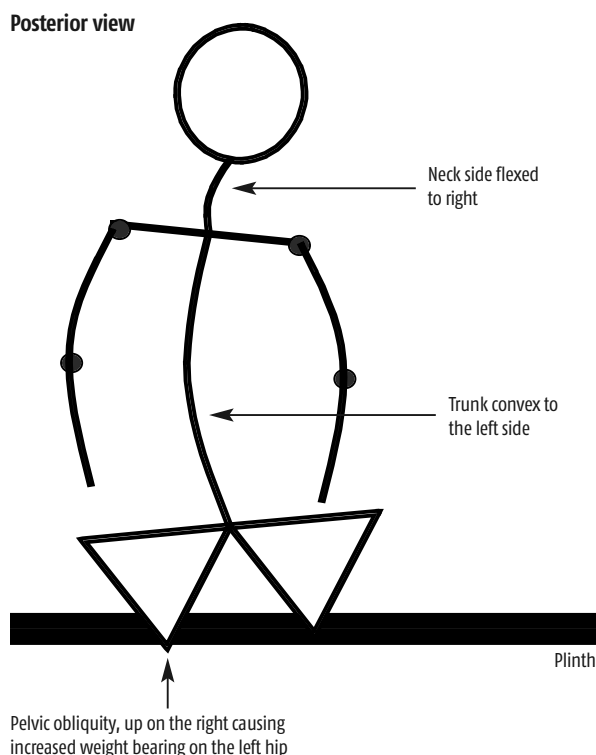


Figure 1A diagram to illustrate the initial sitting posture of Mr A

3. In the absence of validated measures of sitting balance (highlighted by Nieuwboer et al, 1995), the Motor Assessment Scale (MAS) was chosen. It has a subsection for sitting balance. It also reflects physical performance in a range of activities and has been shown to be reliable (Poole and Whitney, 1988).

4. Active range of movement measurements of the neck were taken using a goniometer. This has limitations as these readings have poor reliability. The same person took measurements each time to reduce inter-rater error.

There were several improvements following these treatments (See *Table 1*). Active neck range improved as did the ability to sit unsupported (demonstrated by the MAS and BPM). During one treatment period, active/assisted neck stretches were carried out with the patient sitting on the BPM. Interestingly, with no interventions but the neck stretches, the patient's weight shifted from +2 to the left to 0 (equal weight-bearing). This may be due to improved proprioceptive input from the neck, a reduction in neck pain helping to normalise the perception of vertical, or as yet unknown mechanisms.

However, despite performance improvements, Mr A still tended to sit with the head and trunk in right side flexion. It was hypothesised that this was a compensatory strategy to help maintain

Outcome measure	Initial Ax	After 13 days	45 days post initial Ax
MAS total score	28	33	39
MAS balanced sitting score	2	4	5
Balance performance monitor score	+2 to the left increased weight bearing to left	0 Equal weight bearing of both sides	0 Equal weight bearing of both sides
Active Neck Range			
Left rotation	27°	45°	45°
Right rotation	28°	40°	48°
Left side flexion	15°	20°	20°
Right side flexion	18°	22°	30°

Table 1 Outcome measures for Mr A showing measures following treatment to address head position (day 13), and after the change in treatment strategy to also address selectivity of pelvic and trunk movements (day 45)

balance due to weakness in the left trunk and hip. The patient demonstrated difficulty with moving the trunk selectively, tending to use his head to initiate movements.

Treatment was modified accordingly. Active and assisted neck stretches were continued, but treatment progressed to working on increased selectivity of the left hip, pelvis and trunk. These interventions brought further improvements in posture and function (*Table 1* and *Figure 2*).

CONCLUSIONS

Improvements were seen in sitting posture when strategies were employed to address midline orientation of the head. When neck stretches alone were carried out, this resulted in more equal weight-bearing in sitting. This strongly suggests that input from the head and neck is indeed important in postural control and orientation, as was highlighted in the literature search. It may be that stretching and correcting the muscle imbalance of the neck muscles to allow the patient to gain midline position improved the proprioceptive input as well as positioning the eyes and the vestibular apparatus in an optimum position to interpret incoming sensory information.

However, improvements were also seen in head alignment from working on selective trunk and hip control as it allowed a reduction in compensation from the head to maintain balance. Head and trunk position are almost certainly interrelated and it is probably simplistic to analyze head and neck movements separately from trunk movements as sensory information from the trunk may

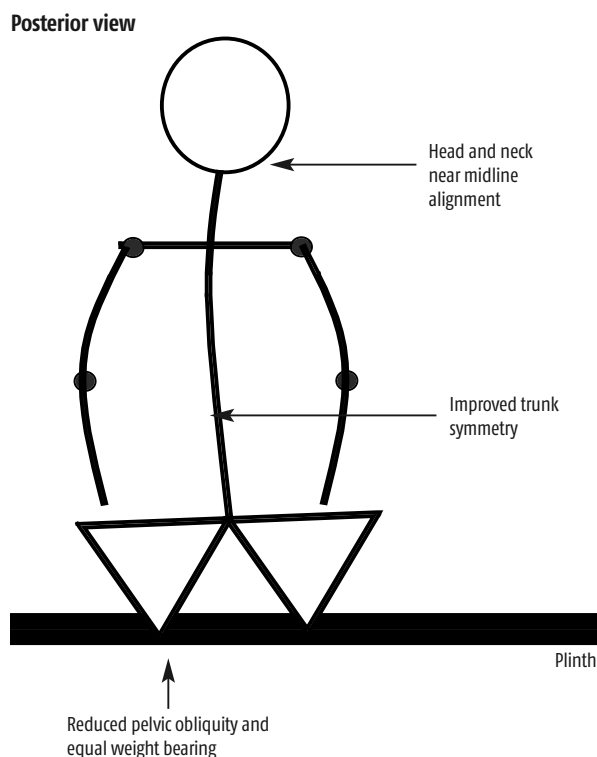


Figure 2 A diagram to illustrate the final sitting posture of Mr A

be just as important when trying to improve postural control.

This is an area which has been given little attention in physiotherapy literature and certainly warrants further study. Many references used in this article are older due to a lack of recent articles on this subject. Suggestions for future research include: evaluating the effect of changes in head position in the stroke population in both sitting and standing; examination of the most effective treatment strategies to address issues with head position and control and, the effect of trunk mobilisation on head position in sitting.

REFERENCES

- Barberini C and Macpherson E (1998) *Effect of head position on postural orientation and equilibrium* Experimental Brain Research 122 (2) pp175–184.
- Bonan I, Yelnik A, Colle F, Michaud C, Normand E, Panigot B, Roth P, Guichard E and Vicaut E (2004) *Reliance on visual information after stroke. Part II: Effectiveness of a balance rehabilitation program with visual cue deprivation after stroke: A randomized controlled trial* Archives of physical medicine and Rehabilitation 85 pp274–278.
- Bove M, Brichetto G, Abbruzzese G, Marchese R and Schieppati M (2004) *Neck proprioception and spatial orientation in cervical dystonia* Brain 127 (12) pp2764–2778.
- Brandt M, Dieterich M and Danek M (1994) *Vestibular cortex lesions affect the perception of verticality* Annals of Neurology 35 (4) pp403–412.
- Carr E, Kenney F, Wilson-Barnett E and Newham D (1999) *Inter-rater reliability of postural observation after stroke* Clinical Rehabilitation 13 pp229–242.
- Carr E and Shepherd R (2004) *Stroke Rehabilitation* Oxford, Butterworth Heinemann.
- Davies P (1985) *Steps to follow: A guide to the treatment of adult hemiplegia*. Berlin, Springer-Verlag.
- De Nunzio A, Nardone A and Schieppati M (2005) *Head stabilisation on a continuously oscillating platform: the effect of a proprioceptive disturbance on the balance strategy* Experimental Brain Research 165 (2) pp261–272.
- Di Fabio R and Emasithi A (1997) *Ageing and the mechanisms underlying head and postural control during voluntary motion* Physical Therapy 77 (5) pp458–473.
- Duclos C, Roll A, Kavounoudias A and Roll J (2004) *Long-lasting body leanings following neck muscle isometric contractions* Experimental Brain Research 158 pp58–66.
- Edwards S (Editor) (1996) *Neurological Physiotherapy: A problem-solving approach* London Churchill Livingstone.
- Grod J and Diakow P (2002) *Effect of neck pain on verticality perception: a cohort study* Archives of Physical Medicine and Rehabilitation 83 (3) pp412–415.
- Harley C, Boyd J, Cockburn J, Collin C, Haggard P, Wann J and Wade D (2006) *Disruption of sitting balance after stroke: influence of spoken output* Journal of Neurology, Neurosurgery and Psychiatry 77 (5) pp674–676.
- Ivanenko Y, Grasso R and Lacquaniti F (1999) *Effect of gaze on postural responses to neck proprioceptive and vestibular stimulation in humans* Journal of Physiology 591 (1) pp301–314.
- Jeka J (1997) *Light touch contact as a balance aid* Physical Therapy 77(5) pp 476–486.
- Kavounoudias A, Gilhodes J and Roll R (1999) *From balance regulation to body orientation: two goals for muscle proprioceptive information processing?* Experimental Brain Research 124 (1) pp80–88.
- Knox J and Hodges P (2005) *Changes in head and neck position affect elbow joint position sense* Experimental Brain Research 165 (1) pp107–113.
- Kogler A, Lindfors J, Odkvist L and Ledin T (2000) *Postural stability using different neck positions in normal subjects and patients with neck trauma* Otolaryngologica 120 (2) pp151–155.
- Mudie M, Winzeler-Mercay U, Radwan S and Lee L (2002) *Training symmetry of weight distribution after stroke: a randomized controlled pilot study comparing task-related reach, Bobath and feedback training approaches* Clinical Rehabilitation 16 pp582–592.
- Nieuwboer A, Feys H, De Weerd W, Nuyens G and De Corte E (1995) *Developing a clinical tool to measure sitting balance after stroke: A reliability study*. Physiotherapy 81(8) pp439–445.
- Perennou D, Amblard B, Leblond C and Pelisser J (1998) *Biased postural vertical in humans with hemispheric cerebral lesions* Neuroscience letters 252 pp75–78.
- Poole J and Whitney S (1988) *Motor Assessment Scale for Stroke Patients: Concurrent Validity and Interrater Reliability* Archives of Physical Medicine and Rehabilitation 69(3) pp195–197.
- Schmidt R and Lee T (1999) *Motor control and learning: a behavioural emphasis* Human Kinetics.
- Snowdon N and Scott O (2005) *Perception of vertical and postural control following stroke: a clinical study* Physiotherapy 91 pp165–170.
- Strupp M, Arbusow V, Dieterich M, Sautier W and Brandt T (1998) *Perceptual and oculomotor effects of neck muscle vibration in vestibular neuritis: Ipsilateral somatosensory substitution of vestibular function* Brain 121 pp677–685.
- Taylor D, Ashburn A and Ward C (1994) *Asymmetrical trunk posture, unilateral neglect and motor performance following stroke* Clinical Rehabilitation 8 pp48–53.
- Vuillermie N, Pinsault N and Vaillant J (2005) *Postural control during quiet standing following cervical muscle fatigue: effects of changes in sensory inputs* Neuroscience Letters 378 (3) pp135–139.
- Wade M and Jones G (1997) *The role of vision and spatial orientation in the maintenance of posture* Physical Therapy 77 (6) pp619–628.
- Yelnik A, Lebreton F, Bonan I, Colle F, Meurin F, Guichard J and Vicaut E (2002) *Perception of verticality after recent cerebral hemispheric stroke* Stroke 33 pp2247–2253.

Elective spinal patients

the implementation of weekend physiotherapy at Kings College Hospital

Karly Dunmall (Band 5 physiotherapist)

Spinal decompression is being performed with increasing frequency (Mannion *et al* 2007). Throughout the UK there is a general agreement with regards to the provision of inpatient physiotherapy for lumbar discectomy surgery within the NHS, with 96% of patients being assessed day one post-surgery, and the number of therapy sessions ranging from 1-6 (Williamson *et al* 2007).

Rehabilitation initiated immediately after elective spinal surgery has been found to promote a rapid return to work (Sjolinder & Nota 1994), prevent further de-conditioning (Kjellby-Wendt & Styf 1998) and shortened sick leave without increased complications (Carragee *et al* 1996). Mobility and education were the most common themes within treatment in preparation for discharge (93%), and the most common type of exercises prescribed were spinal stabilisation (Williamson *et al* 2007). Spinal stabilisation exercises have not yet been validated in the post-surgical group (Williamson *et al* 2007), however multifidus muscle wasting is evident after lumbar spine decompression surgery (Gejo *et al* 1999), indicating the importance of these exercises. Carragee *et al* (1996; 1999) removed all postoperative restrictions and found no increase in complication rates, therefore from a healing perspective, postures and mobility, which stress the healing tissues, promote repair and maintain flexibility (Provenzano *et al* 2003).

In June 2004 the NHS improvement plan set an ambitious target. By 2008 there will be a maximum wait of 18 weeks from GP referral to treatment in hospital, if required (DOH 2006). To help achieve this target for elective spinal surgery patients Kings College Hospital neurosurgical physiotherapy department moved away from traditional hours of work to eliminate any unnecessary delays. A Saturday morning physio-

therapy service was introduced in September 2007 for a period of six months to reduce the length of hospital stay for elective spinal surgery patients.

Prior to the introduction of a physiotherapist on Saturday, patients undergoing surgery from Monday to Thursday were assessed by the physiotherapist the following day, and if appropriate, attended the back class. They were then discharged if they successfully completed the class. Patients undergoing surgery on Fridays did not see the physiotherapist until Monday and consequently were not discharged until Monday afternoon. Some of the patients operated on Thursdays were not fit for the class on the Friday and suffered similar delays in discharge as Friday operations. To support these observations retrospective data collection was carried out for July 2007, and found that a large number of patients having surgery on a Thursday or Friday were discharged after back class on a Monday. This indicated the need for further data collection in August, which found similar results. The August bank holiday further prolonged the length of hospital stay, which could have been prevented for some patients if physiotherapy had been available at the weekend. Therefore a change of service was devised to see if implementing a Saturday physiotherapy service reduced length of stay, promoted discharges over the weekend and allowed admissions for surgery on the Monday.

PROCESS

A single therapist worked Tuesday through to Saturday coordinating back patients care and discharge planning to increase continuity of care and streamline service. Awareness of admissions was achieved using the pre-planned admissions list and liaising with the multidisciplinary neurosurgical team.

Pharmacy is not a six-day service and to prevent creating too much extra work for the team a brief

Month	Total patients treated Saturday	Total Saturdays in month	Discharge Physiotherapy		Discharge Hospital				Average discharges per weekend	Total bed days saved
			Saturday	Monday	Saturday	Sunday	Monday	Tuesday		
July	0	4	0	8	0	0	3	3	0	0
August	0	3	0	12	0	0	6	1	0	0
September	16	3	6	3	2	2	6	5	1.33	6
October	20	4	9	3	3	3	3	3	1.50	9
November	20	4	12	1	5	3	4	1	2.00	13
December	18	5	6	6	2	2	6	3	0.80	6
January	14	4	2	10	0	2	6	4	0.40	2
February	14	3	2	2	0	2	2	2	0.67	2
Average per month			6.20		2.00	2.33			1.10	6.30

Table 1 Summary of results for elective spinal surgery weekend discharges.
Pre-weekend service: July–August. Post-weekend service: September–February.

	Day of Surgery		
	Monday	Thursday	Friday
July–August			
Number of patients	15	14	6
Mean (days)	2.80	5.00	4.00
Range (days)	1–9	2–14	3–6
October–November			
Number of patients	6	8	16
Mean (days)	2.00	2.75	4.10
Range (days)	1–3	1–5	1–8
December–February			
Number of patients	9	4	18
Mean (days)	3.70	2.50	3.33
Range (days)	2–7	1–3	1–6

Table 2 The range, mean and median length of post-operative hospital stays for patients being operated on three different days.

meeting on Friday mornings was arranged to decide which patients would definitely require medication in order to go home at the weekend. Prediction of patients being discharged at the weekend was based on patient age, type of operation and pre-morbid level of mobility. It was also essential to liaise with the spinal nurse and medical team to ensure all discharge documentation was completed prior to the weekend.

Patients included were all patients having elective spinal surgery, to include, laminectomies, instrumental fixations, microdiscectomies and discectomies. The majority were lumbar spine because cervical spine patients are not routinely seen post-operatively. However, the few cervical spine patients seen by physiotherapy were also included in the study.

RESULTS

See *Tables 1 and 2* above.

Data was collected for three different time periods: one prior to the introduction of the Saturday physiotherapy service (July–August), and two with the Saturday physiotherapy service (October–November and December–February).

Three different operating days were analysed, Monday, Thursday and Friday. To compare the mean and median lengths of post-operative hospital stay during each time period.

The introduction of the Saturday physiotherapy service demonstrated a reduction in length of hospital stay for both patients being operated on Thursday and Friday.

ANALYSIS

A reduction was shown in median post-operative length of hospital stay for patients operated on Thursdays from 5.0 days to 3.0 days (Mean 5.0 to 2.5 days), and Fridays from 4.0 days to 3.0 days (Mean 4.0 to 3.33 days) (*Figure 1*). An average of 6.3 bed days were saved per month (range between 2.0–13.0 days) (*Figure 2*), and it is assumed that a shorter inpatient stay was thought to decrease hospital costs.

DISCUSSION

Since September the introduction of a Saturday physiotherapist has produced positive results. November saw 13 bed days saved from the eight weekend discharges, which reduced length of hospital stay and we also assume a reduction in hospital costs, along with freeing beds for elective admissions.

The number of weekend discharges declined in the last three months. Over the Christmas and New Year period the main elective spinal surgery ward was closed for two weeks, therefore, on average fewer patients were treated on a Saturday. In December 55% (10) of patients were day one post-op and 17% (3) were on bed rest prior to the Saturday, so treatment was often

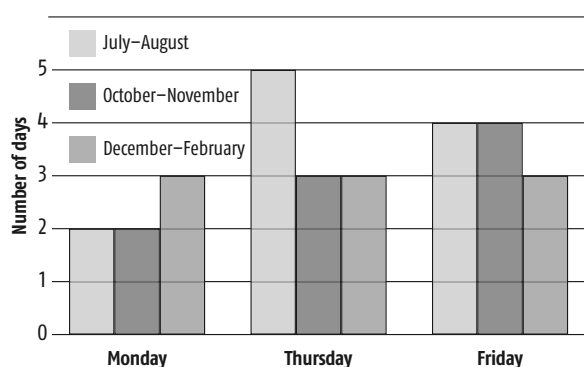


Figure 1 Length of median post-operative hospital stay before and after the introduction of the Saturday physiotherapy service.

limited by pain. Three patients also had to return to their local hospital for further input, which prolonged the inpatient stay.

In January 65% of the patients treated on a Saturday either had complex surgery involving instrumentation and fixation, or had previously had spinal surgery. These patients appeared to have more pain and were more cautious with regards to progressing therapy post-operatively. In February 36% of the patients seen on Saturdays were day one post operatively, all were multi-level or instrumented fixations, which normally progress more slowly. There were also three cervical surgery patients which are not normally referred to physiotherapy unless the patient had poor mobility prior to surgery.

The number of bed days saved did fluctuate on a monthly basis, however the results were positive for the entire six months, and with a permanent Saturday service are likely to improve even further.

Patients having surgery on Mondays initially showed no reduction in length of post-operative stay when the Saturday service was introduced, in fact the average length of stay actually increased within the final three months of the trial. However, 56% of the Monday surgery patients during December to February were either admitted to the High Dependency Unit or were on bed rest post-operatively, which would account for the increased length of stay.

Initially the Friday operations did not see a reduction in post-operative length of stay. Collectively in July and August only six operations were performed on a Friday, of which 33% were discharged by Monday, whereas October and November had a total of 16 operations, of which 44% were discharged by Monday. As the trial continued the median length of post-operative stay did reduce from four days to three, with a greater percentage of patients (61%) being discharged by Monday for a greater number of operations.

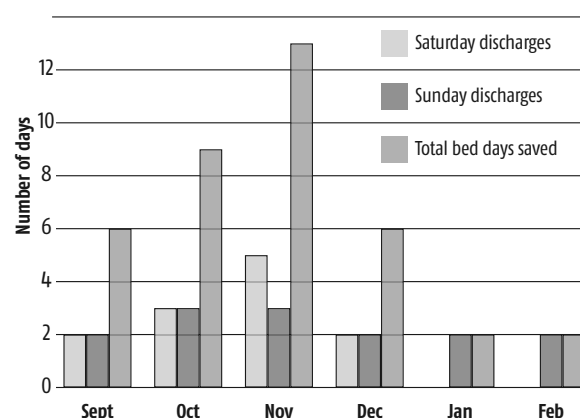


Figure 2 Total weekend discharges and bed days saved for each month.

CONCLUSION

This service development audit has shown a reduction in post-operative length of hospital stay for elective spinal surgery patients. There have been a number of problems since the introduction of a Saturday physiotherapist, most came from poor awareness of the service initially, and are likely to underestimate the potential of this service at present. These issues were addressed as they arose, demonstrated by the initial steady increase in weekend discharges and reduction in length of stay. As a result of this audit funding has been approved for a further twelve months to continue the Saturday physiotherapy service. A new target has also been set to further reduce post-operative stay to two days.

REFERENCES

- Carragee E, Han M, Yang B, Kim D, Kraemer H, Billis J (1999) Activity restrictions after posterior lumbar discectomy *Spine* 24 pp2346–2351.
- Carragee EJ, Helms E, O'Sullivan G (1996) Are postoperative activity restrictions necessary after posterior lumbar discectomy *Spine* 21 pp1893–1897.
- Gejo R, Matsui H, Kawaguchi Y, Ishihara H, Tsuji H (1999) Serial changes in trunk muscle performance after posterior lumbar surgery *Spine* 24 pp1023–1028.
- Kjellby-Wendt G, Syrf J (1998) Early active training after lumbar discectomy. A prospective, randomized and controlled study *Spine* 23 (21) pp2345–51.
- Mannion AF, Denzler R, Dvorak J, Muntener M, Grob D (2007) A randomised controlled trial of post-operative rehabilitation after surgical decompression of the lumbar spine *European Spine Journal* 16 pp1101–1117.
- Provenzano P, Martinex D, Grindeland R, Dwyer K, Turner J, Vailas A, Vanderby R (2003) Hindlimb unloading alters ligament healing *Journal of Applied Physiology* 94 pp314–324.
- Sjolinder PO and Nota DF (1994) Early Return to Work Following an Aggressive Rehabilitation Program Initiated One Day After Spine Surgery *Journal of Occupational Rehabilitation* 4 (4) pp211–228.
- Williamson E, White L, Rushton A (2007) A survey of post-operative management for patients following first time lumbar discectomy *European Spine Journal* 16 pp795–802.

Late stage physiotherapy

rehabilitation following severe traumatic brain injury – a case report exploring a client with severe physical impairments four years post injury

Hannah L Dearlove MCSP Senior Physiotherapist Brain Injury Centre, Queen Elizabeth's Foundation, Surrey

There is a growing body of evidence to suggest that significant motor recovery following severe traumatic brain injury (TBI) can continue for several years post injury^{1,3,6,7,8,9}. This evidence tends to focus on intervention leading to successful motor recovery⁹, however there is limited evidence documenting the intervention where motor recovery is limited. Time invested with such clients to assist with postural management is invaluable.

This case study came about following work with a client who had severe physical limitations following a TBI and was in rehabilitation at the Queen Elizabeth's Foundation, Brain Injury Centre, Surrey. Although he made some progress, functional gains were minimal. The gains he did make were relatively small and some were difficult to measure objectively, however there was a great deal to learn from him. The success was in his postural management and the small, but significant, progression of his postural abilities.

This case study aims to describe the variety of equipment and treatment options explored in managing his severe postural requirements.

THE PATIENT

In July 2004 at the age of 18 Ben suffered a severe TBI, in a road traffic accident as a cyclist. He sustained severe brain stem injuries, diffuse axonal injuries and cerebral oedema and was in a persistent vegetative state for several months. Ben commenced rehabilitation at the Brain Injury Centre in May 2007 due to the closure of his previous rehabilitation unit. He presented with severe physical difficulties including: increased tone, no functional movement throughout his left side, over-activity of his right lower limb, no sitting balance and joint restriction in his left elbow, ankle and right hand (see posture examples, *Figure 1*).

He required the assistance of two with personal care, bed mobility and low-level crouch transfers and three to stand to a standing frame. Ben had complex behavioural and speech difficulties. He was not open to using communication strategies and his voice was unreliable. The only reliable form of communication was movement of his right hand for 'yes' and shaking his head for 'no'. Cognitively he had severe anterograde amnesia and lacked insight, often denying his TBI. Subsequently, his ability to comply with therapy was extremely limited and had a significant impact on his ability to change functionally.



Figure 1 Posture examples in lying and sitting



THE INTERVENTION

Initially the possibility of Ben changing functionally was explored. However, following a preliminary period of rehabilitation it was evident that any functional changes would be minimal. Thus, the focus moved more towards postural management and to allow him to participate as much as possible in movement. This involved improving range of movement and activity in his trunk and pelvis, increasing range distally in his left side and improving his ability to move between and access a variety of postural sets.

During this time exploring seating options was a significant factor in his postural management.

Treatment very much depended on Ben's behaviour, the equipment and the experience and number of staff available. Risk assessment was an ongoing process. He required a 2:1 ratio in most sessions and occasionally a 3:1 ratio due to his physical limitations and unpredictable behaviour. He was only ever seen on a 1:1 basis once set up in a position of safety.

He often actively resisted the movement trying to be gained and frequently did the opposite of what was being asked. At times this could be used effectively to gain what was required, but he was not always consistent with this. Despite these difficulties, Ben enjoyed exploring movement opportunities.

IMPROVING RANGE AND ACTIVITY IN TRUNK AND PELVIS

Increasing the range and activation in Ben's trunk and pelvis was explored utilising a variety of equipment and treatment techniques. He required innovative approaches to keep him engaged and manage his behaviour. Through exploration it was ascertained that we could be more experimental in treatment than initially thought. This is best demonstrated through the use of photographs, see *Figures 2 to 8*.



Figure 2 Lateral trunk elongation working from side lying to sitting. Carried over functionally with carers when getting out of bed.



Figure 3 Inversion with assistance of two. To mobilise trunk and gain central stability in a novel framework. Reducing his preconceived ideas of extension.



Figure 4 Meywalk frame with assistance of two. Exploring stepping and postural extension against gravity.



Figure 5 Trunk mobilisation and activation with large gym ball. Used in supine and prone.



Figure 6 On crash mat to explore trunk mobilisation and varying postural sets to activate trunk. Use of harness with roll on crash mat to explore four-point kneeling.



Figure 7 Trunk activation on roll (Sammons Preston Rolyan roll) – Ben moving roll with pelvis sitting astride and anatomy quiz using skeleton for trunk rotation.



Figure 8 Soft tissue mobilisation on blue roll.

THE ABILITY TO MOVE BETWEEN AND ACCESS A VARIETY OF POSTURAL SETS

Following work to increase the activity and range in Ben's trunk he became increasingly able to explore moving between postural sets. With encouragement he was able to roll to the left and right, assist with lying to sitting (see *Figure 2*) and roll over to prone (see *Figures 11* and *12*). He also demonstrated an improved ability to move between sitting and standing and maintain a standing position with reduced support (*Figure 9*). However, for prolonged periods of standing an electric standing frame was considered the best option (see *Figure 10*).



Figure 9 Exploring standing.



Figure 10 Ben in electric standing frame (Quest 88) with thoracic and head support.



Figure 11 Rolling from supine to prone over the right side with minimal assistance.



Figure 12 With left arm positioned over edge of bed, Ben would relax in prone and often fell asleep.



It is evident from changes in outcome measure scores that Ben's postural abilities improved (see *Table 1*). His trunk and pelvis activity and ability to move between and access postural sets had progressed following intervention. Having a larger repertoire of postural sets and being able to assist when moving between them increased his postural activity, thus reducing the possibility of deterioration.

	On Admission	Following Intervention
Postural Assessment Scale ²	10/36	15/36
Trunk Control Test ⁵	0/100	24/100

Table 1 Outcome measures.

INCREASING RANGE DISTALLY

The restrictions in Ben's left ankle and elbow had a significant impact on his alignment in all postural sets. Improving range was challenging due to the severity of his tone. It was achieved in various ways: exploring a variety of splints, Botulinum Toxin, soft tissue release, anti-spasticity medication and dosage review, serial casting, soft-scotch casts and regular standing to assist with ankle range. His left elbow was progressed from 90 degrees to 75 degrees flexion (with forearm in $\frac{3}{4}$ pronation). His ankle was progressed from 45 degrees to 30 degrees plantarflexion.

Increasing elbow range assisted with personal care and also enabled him to position his left arm over the edge of the bed when lying prone. The range gained at his ankle improved his alignment in sitting and standing and improved his ability to weight-bear in crouch transfers. Finding long-term splints that were strong enough to maintain range was challenging. Following trials of several splints the long-term solutions were a CDS ankle brace⁴ and a bespoke polythene arm gutter with an elbow cap.

EXPLORING SEATING

As Ben's right side and trunk became stronger, his ability to alter his position increased but this had a negative impact on his posture. He used a mass extensor pattern, pushing through his right leg. This was usually a result of a behavioural response. Several footplates were broken as a result of this movement pattern.

When assessed in sitting, if Ben's pelvis was anchored in neutral, he gained lumbar extension and improved alignment throughout his trunk and neck. Many adjustments were made to his current

seating in order to secure his pelvis, however these were all ineffective. To maintain and improve his sitting posture and prevent deterioration, correct seating was integral. Whilst at The Centre Ben was assessed in a moulded seating system (see *Figure 13*) and for specialist seating. He is awaiting casting for a moulded seat insert, which should maintain his pelvis in neutral and sustain his posture for longer periods. Exploring seating was a long and protracted process due to a number of factors, including funding issues.



Figure 13 Left, Ben's current seating system. Right, assessing Ben in a chair with a moulded seat insert (He chose not to wear footwear on right foot and would remove it immediately if put on).

Throughout his time at The Centre, all staff completed low level crouch transfers with Ben with the aim that he would gradually become more interactive and reliable with them. However, these remained unpredictable due to his behaviour and cognitive difficulties. For this reason and for the future provision of a moulded seating system, it was felt hoisting was the most appropriate long-term option.

DISCUSSION

Ben was a challenging client with complex difficulties. His cognitive and behavioural impairments have had a profound effect on his rehabilitation potential. Owing to this, the way in which we worked with him had to be innovative and varied in order to manage his behaviour, engage him in sessions and reduce his pre-conceived ideas of movement. Liaison with family to establish his interests and history was integral in engaging him effectively in sessions.

Having the staff available and suitable equipment was essential to explore fully his potential and activate his trunk in a variety of novel ways. The equipment enabled us to work with him safely in many positions, which would otherwise not have been possible, due to his unreliable behaviour. The time he spent at The Centre also gave us

the opportunity to loan and trial several pieces of equipment for Ben, such as splints and standing frames, prior to their purchase.

A consistent multi-disciplinary approach was fundamental with managing behaviour and more importantly managing behaviour in regard to manual handling. As Ben became stronger and developed a degree of movement control, behavioural issues when assisting him with movement became more prominent. All manual handling was completed in conjunction with behavioural guidelines and, with experience, staff were able to manage any behavioural issues confidently and effectively. This was vital as it enabled care staff to carry through elements of his physical rehabilitation throughout the day, such as using the standing frame and assisting him with lying to sitting.

Over time, Ben improved in his pelvis and trunk activity (including rotation) and alignment. This enabled him to assist and resist movement (not always in a positive way), alter his posture, reach further with his right arm and move between and access an increased variety of postural sets. Owing to limited insight and communication difficulties, it was not possible to determine the difference this made to Ben's quality of life. However, he now has more movement choices and a degree of control. Family have been able to explore more movement options with Ben and have reported the level of support he requires physically has gradually reduced.

If Ben hadn't had the opportunity to access rehabilitation, his posture is likely to have been extremely difficult to manage in the community, due to staffing, environmental constraints and equipment availability. He is at a level now where his posture is much more manageable and he has more movement control. As a result of this, his risk of deterioration or developing secondary complications has greatly reduced.

Overall, Ben's motor recovery was limited. However, investing time in his rehabilitation has enabled him to make small, but significant changes, ultimately reducing his complex postural requirements and is likely to have increased his quality of life, now and in the future.

CONCLUSION

Ben presented with severe physical, cognitive and behavioural difficulties following his TBI. He presented a challenge in rehabilitation due to his lack of insight and unreliable behaviour. Despite limited motor recovery, he made significant progress in his postural abilities, reducing his long-term postural requirements. In being experimental with our equipment and therapy Ben was

able to explore activating his trunk in a variety of safe and novel ways and which ultimately led to progression. Without input, he is likely to have been extremely difficult to manage in the community because of complex postural requirements, and his posture would be more likely to deteriorate leading to secondary complications.

KEY MESSAGES

- Being innovative in treatment, not only to maintain focus and manage behaviour, but to explore activating the trunk in a variety of ways.
- When motor recovery is limited it is essential to invest rehabilitation time in improving postural abilities and managing complex posture for the long term.
- Having the right equipment and number of staff available if you work with such clients is integral to fully explore their potential in a safe and novel way.
- Improving proximal activity to provide a stable reference point for posture and movement.
- A strong multi-disciplinary approach is essential to ensure consistency in all areas of rehabilitation.

ACKNOWLEDGEMENTS

I would like to thank the patient described and his family for giving their permission to give this account. Thanks also go to my colleagues who were involved in his care and management. The patient's real name was changed for this account.

REFERENCES

- 1 Burke D, Alexander K, Baxter F, Connell K, Diggles S, Feldan K, Horny A, Kokinos M, Moloney D and Withers J (2000) *Rehabilitation of a person with severe traumatic brain injury* Brain Injury 14 (5) pp463–471.
- 2 Benaim C, Alain Pérennou D, Villy J, Rousseaux M, Yvon Pelissier J (2000) *Validation of a Standardized Assessment of Postural Control in Stroke Patients* Stroke 30 pp1862–1868.
- 3 Butler P, Farmer S and Major R (1997) *Improvements in gait parameters following late stage intervention in traumatic brain injury: a long-term follow-up report of a single case* Clinical Rehabilitation 11 pp220–226.
- 4 CDS ankle brace (online image) (2009) Available at www.albrechtgmbh.com/sprachen/de/produkte/fuss/cds-sprunggelenk.php
- 5 Franchignoni F, Tesio L, Ricupero C, Martino M (1997) *Trunk Control Test as an Early Predictor of Stroke Rehabilitation Outcome* Stroke 28 pp1382–1385.
- 6 Hitchcock R, Watson M (2004) *Recovery of walking late after a severe traumatic brain injury* Physiotherapy 90 pp103–107.
- 7 Wales L, Bernhardt J (2000) *A case for slow to recover rehabilitation services following severe acquired brain injury* Australian Journal of Physiotherapy 46 pp143–146.
- 8 Watson M, Bailey B, Trebble H (2003) *Later stage recovery following severe traumatic brain injury? Identifying the evidence.* Synapse Autumn pp5–9.
- 9 Watson M (2007) *Feasibility of further motor recovery in patients undergoing physiotherapy more than 6 months after severe traumatic brain injury: An updated literature review* Physical Therapy Reviews 12 pp21–32.



heads up!

Career opportunity

heads up! is a specialist out-patient neurological physiotherapy practice with clinics at South Holmwood (near Dorking), New Victoria Hospital (Kingston), Roehampton and Sevenoaks. We are committed to developing one of the best neurological physiotherapy practices in the country.

We offer:

- the opportunity to treat patients with a wide range of neurological conditions at different stages in their rehabilitation
- the chance to focus fully on treatment
- the opportunity to provide patients with regular quality treatment based on clinical need over extended periods
- the chance to work (and learn) with other senior neuro-physiotherapists
- the opportunity to work with a group of dedicated and enthusiastic patients
- weekly in-house CPD
- funding for relevant courses

We require:

- you to be at least five years qualified
- you have at least three years' neurological clinical experience
- completion of the three week basic Bobath course on Adults with neurological conditions
- enthusiasm
- flexibility
- ability to work well within a team
- professional commitment
- motivation and organisational abilities
- willingness to work in any of our clinic locations and within the community
- use of own car

If you are interested in a career with heads up!
please email your CV to **admin@headsup.co.uk**

heads up! 9 Warwick Road, South Holmwood, Dorking, Surrey RH5 4NP

ARTICLES IN OTHER JOURNALS

AMERICAN JOURNAL OF PHYSICAL MEDICINE AND REHABILITATION Volume 88:3

- Carter SE, Richardson JK, Thies S, DeMott T, Ashton-Miller JA *The relationship between frontal plane gait variability and ankle range of motion in middle-aged and older persons with neuropathy.* pp210–215.
- Facchin P, Rosa–Rizzotto M, Turconi AC, Pagliano E, Fazzi E, Stortini M, Fedrizzi E *The Gipci Studi Group: Multisite trial on efficacy of constraint-induced movement therapy in children with hemiplegia: study design and methodology* pp216–230.
- Miyamoto S, Kondo T, Suzukamo Y, Michimata A, Izumi S-I *Reliability and validity of the manual function test in patients with stroke* pp247–255.

Volume 88:4

- Hahn A, Duisberg B, Neubauer BA, Stephani U, Rideau Y *Non-invasive determination of the tension-time index in Duchenne muscular dystrophy* pp322–327.
- Miller M, Flansbjerg U–B, Lexell J *Voluntary activation of the knee extensors in chronic poststroke subjects* pp286–291.

Volume 88:7

- Park JY, Chun MH, Kang SH, Lee JA, Kim BR, Sin MJ *Functional outcome in poststroke patients with or without fatigue* pp554–558.

Volume 88:8

- Park JH, Chun MH, Ahn JS, Yu JY, Kang SH *Comparison of gait analysis between anterior and posterior ankle foot orthosis in hemiplegic patients* pp630–634.

Volume 88:9

- Kim JH, Jang SH, Kim CS, Jung JH, You JH *Use of virtual reality to enhance balance and ambulation in chronic stroke: A double-blind, randomized controlled study* pp693–701.

Volume 88:10

- Kim DY, Ohn SH, Yang EJ, Park C-I, Jung KJ *Enhancing motor performance by anodal transcranial direct current stimulation in subacute stroke patients* pp829–836.
- Lakse E, Gunduz B, Erhan B, Celik EC *The effect of local injections in hemiplegic shoulder pain: a prospective, randomized, controlled study* pp805–811.

ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION Volume 90:2

- Ana Cristina R, Camargos ACR, Rodrigues-de-Paula-Goulart F, Teixeira-Salmela LF *The effects of foot position on the performance of the sit-to-stand movement with chronic stroke subjects* pp314–319.
- Mudge SN, Stott S *Timed walking tests correlate with daily step activity in persons with stroke* pp296–30.

Volume 90:3

- Gerrits KH, Beltman MJ, Koppe PA, Konijnenbelt H, Elich PD, de Haan A, Janssen TW *Isometric muscle function of knee extensors and the relation with functional performance in patients with stroke* pp480–487.
- Manns PJ, Tomczak CR, Jelani A, Cress ME, Haennel R *Use of the continuous scale physical functional performance test in stroke survivors* pp488–493.

- Rimmer JH, Rauworth AE, Wang EC, Terry LN, Hill B A *preliminary study to examine the effects of aerobic and therapeutic (nonaerobic) exercise on cardiorespiratory fitness and coronary risk reduction in stroke survivors* pp407–412.

- Tyson SF, Rogerson L *Assistive walking devices in nonambulant patients undergoing rehabilitation after stroke: the effects on functional mobility, walking impairments, and patients' opinion* pp475–479.

Volume 90:4

- Hirsh AT, Turner AP, Ehde DM, Haselkorn JK *Prevalence and impact of pain in multiple sclerosis: physical and psychological contributors* pp646–651.
- Kayes NM, Schluter PJ, McPherson KM, Leete M, Mawston G, Taylor D *Exploring actical accelerometers as an objective measure of physical activity in people with multiple sclerosis* pp594–601.
- Massie C, Malcolm MP, Greene D, Thaut M *The effects of constraint-induced therapy on kinematic outcomes and compensatory movement patterns: an exploratory study* pp571–579.
- Morris DM, Taub E, Macrina DM, Cook EW, Geiger BF *A method for standardizing procedures in rehabilitation: use in the extremity constraint induced therapy evaluation multisite randomized controlled trial* pp663–668.
- Widener GL, Allen DD, Gibson-Horn C *Balance-based torso-weighting may enhance balance in persons with multiple sclerosis: preliminary evidence* pp602–609.
- Williams G, Morris ME, Schache A, McCrory PR *Incidence of gait abnormalities after traumatic brain injury* pp587–593.

Volume 90:5

- Fatone S, Gard SA, Malas BS *Effect of anklefoot orthosis alignment and foot-plate length on the gait of adults with poststroke hemiplegia* pp810–818.
- Gao F, Grant TH, Roth EJ, Zhang L-Q *Changes in passive mechanical properties of the gastrocnemius muscle at the muscle fascicle and joint levels in stroke survivors* pp819–826.
- Krassioukov A, Eng JJ, Warburton DE, Teasell R *Spinal cord injury rehabilitation evidence research team. A systematic review of the management of orthostatic hypotension after spinal cord injury* pp876–885.

Volume 90:6

- Boonsinsukh R, Panichareon L, Phansuwan-Pujito P *Light touch cue through a cane improves pelvic stability during walking in stroke* pp919–926.
- de Leon MB, Kirsch NL, Maio RF, Tan-Schriner CU, Millis SR, Frederiksen S, Tanner CL, Breer ML *Baseline predictors of fatigue one year after mild head injury* pp956–965.
- Epstein-Lubow GP, Beevers CG, Bishop DS, Miller IW *Family functioning is associated with depressive symptoms in caregivers of acute stroke survivors* pp947–55.
- Falvo MJ, Earhart GM *Six-minute walk distance in persons with Parkinson Disease: a hierarchical regression model* pp1004–1008.
- Frykberg GE, Åberg AC, Halvorsen K, Borg J, Hirschfeld H *Temporal coordination of the sit-to-walk task in subjects with stroke and in controls* pp1009–1017.
- Melzer I, Tzedek I, Or M, Shvartsh G, Nizri O, Ben-Shitrit K, Oddsson LE *Speed of voluntary stepping in chronic stroke survivors under*

single and dual-task conditions: a case-control study pp927-933.

Volume 90:7

Datta S, Lorenz DJ, Morrison S, Ardolino E, Harkema SJ **A multivariate examination of temporal changes in Berg Balance Scale items for patients with ASIA Impairment Scale C and D spinal cord injuries** pp1208-1217.

Volume 90:8

Allet L, Leemann B, Guyen E, Murphy L, Monnin D, Herrmann FR, Schnider A **Effect of different walking aids on walking capacity of patients with poststroke hemiparesis** pp1408-1413.

CLINICAL REHABILITATION

Volume 23:4

Haworth J, Young C, Thornton E **The effects of an 'exercise and education' programme on exercise self-efficacy and levels of independent activity in adults with acquired neurological pathologies: an exploratory, randomized study** pp371-383.

McPherson KM, Kayes N, Weatherall M on behalf of all members of the Goals-SR Research Group **A pilot study of self-regulation informed goal setting in people with traumatic brain injury** pp296-309.

Playford ED, Siegert R, William Levack L, Freeman J **Areas of consensus and controversy about goal setting in rehabilitation: a conference report** pp334-344.

Turner-Stokes L **Goal attainment scaling (GAS) in rehabilitation: a practical guide** pp362-370.

Wade DT **Goal setting in rehabilitation: an overview of what, why and how** pp291-295.

Volume 23:5

Brogårdh C, Flansbjer U, Lexell J **What is the long-term benefit of constraint-induced movement therapy? A four-year follow-up** pp418-423.

Hammer A, Lindmark B **Is forced use of the paretic upper limb beneficial? A randomized pilot study during subacute post-stroke recovery** pp424-433.

Volume 23:6

Iwarsson S, Horstmann V, Carlsson G, Oswald F, Wahl HW **Person-environment fit predicts falls in older adults better than the consideration of environmental hazards only** pp558-567.

Jones F, Mandy A, Partridge C **Changing self-efficacy in individuals following a first time stroke: preliminary study of a novel self-management intervention** pp522-533.

Katsuhiko T, Yohei O, Koji S, Tomoaki S **Does assessing error in perceiving postural limits by testing functional reach predict likelihood of falls in hospitalized stroke patients?** pp568-575.

Kayes NM, Schluter PJ, McPherson KM, Taylor D, Kolt GS **The Physical Activity and Disability Survey - Revised (PADS-R): an evaluation of a measure of physical activity in people with chronic neurological conditions** pp534-543.

Volume 23:7

Babyar SR, Peterson MGE, Bohannon R, Pérennou D, Reding M **Clinical examination tools for lateropulsion or pusher syndrome following stroke: a systematic review of the literature** pp639-650.

Katsuhiko T, Yohei O, Koji S, Tomoaki S **Does assessing error in perceiving postural limits by testing functional reach predict likelihood of falls in hospitalized stroke patients?** pp568-575.

Volume 23:8

Borisova Y, Bohannon RW **Positioning to prevent or reduce shoulder range of motion impairments after stroke: a meta-analysis** pp681-686.

Glinsky J, Harvey L, van Es P, Chee S, Gandevia SC **The addition of electrical stimulation to progressive resistance training does not enhance the wrist strength of people with tetraplegia: a randomized controlled trial** pp696-704.

GAIT AND POSTURE

Volume 29:3

Balasubramanian CK, Neptune RR, Kautz SA **Variability in spatiotemporal step characteristics and its relationship to walking performance post-stroke** pp408-414.

Jonsdottir J, Recalcati R, Rabuffetti M, Casiraghi A, Boccardi S, Ferrarin M **Functional resources to increase gait speed in people with stroke: Strategies adopted compared to healthy controls** pp355-359.

Williams G, Morris ME, Schache A, McCrory P **Observational gait analysis in traumatic brain injury: accuracy of clinical judgment** pp 454-459.

Volume 29:4

Motoyoshi M, Kazu A, Tadimitsu M, Yumiko A, Ryusuke Y, Takashi B **Analysis of dynamic sitting balance on the independence of gait in hemiparetic patients** pp530-534.

Volume 30:5

Bleyenheuft C, Cockx S, Caty G, Stoquart G, Lejeune T, Detrembleur C **The effect of botulinum toxin injections on gait control in spastic stroke patients presenting with a stiff-knee gait** pp168-172.

Chihiro M, Shohei O, Satoru M **Analysis of stroke patient walking dynamics using a tri-axial accelerometer** pp60-64.

Nardone A, Godi M, Grasso M, Guglielmetti S, Schieppati M **Stabilometry is a predictor of gait performance in chronic hemiparetic stroke patients** pp5-10.

INTERNATIONAL JOURNAL FOR REHABILITATION RESEARCH

Volume 32:1

Keresztényi Z, Cesari P, Fazekas G, Laczkó J **The relation of hand and arm configuration variances while tracking geometric figures in Parkinson's Disease: aspects for rehabilitation** pp53-63.

Volume 32:2

Snögren M, Sunnerhagen KS **Description of functional disability among younger stroke patients: exploration of activity and participation and environmental factors** pp124-131.

Wolfenden B, Grace M **Returning to work after stroke: a review** pp93-97.

PHYSICAL THERAPY

Volume 89:2

Jette DU, Halbert J, Iverson C, Miceli E, Shah P **Use of standardized outcome measures in physical therapist practice: perceptions and applications** pp125-135.

Wulf G, Landers M, Lewthwaite R, Töllner T **External focus instructions reduce postural instability in individuals with Parkinson Disease** pp162-168.

Volume 89:3

Harting J, Rutten GMJ, Rutten STJ, Kremers SP **A qualitative application of the diffusion of innovations theory to examine determinants of guideline adherence among physical therapists** pp221-232.

McGinnis PQ, Hack LM, Nixon-Cave K, Michlovitz SL **Factors that influence the clinical decision making of physical therapists in choosing a balance assessment approach** pp233-247.

Volume 89:4

King LA, Horak FB **Delaying mobility disability in people with Parkinson Disease using a sensorimotor agility exercise program** pp384-393.

- Siengsukon CF, Boyd LA **Does sleep promote motor learning? Implications for physical rehabilitation** pp370–383.

Volume 89:5

- Beissner K, Henderson Jr CR, Papaleontiou M, Olkhovskaya Y, Wigglesworth J, Reid MC **Physical therapists' use of cognitive-behavioral therapy for older adults with chronic pain: a nationwide survey** pp456–469.
- Kahn JH, Hornby TG **Rapid and long-term adaptations in gait symmetry following unilateral step training in people with hemiparesis** pp474–48.

Volume 89:6

- Hammer AM, Lindmark B **Effects of forced use on arm function in the subacute phase after stroke: a randomized, clinical pilot study** pp526–539.
- Musselman KE, Fouad K, Misiaszek JE, Yang JF **Training of walking skills overground and on the treadmill: case series on individuals with incomplete spinal cord injury** pp601–611.
- Ries JD, Echternach JL, Nof L, Blodgett MG **Test-retest reliability and minimal detectable change scores for the timed 'up and go' test, the six-minute walk test, and gait speed in people with Alzheimer Disease** pp569–579.
- Salbach NM, Veinot P, Rappolt S, Bayley M, Burnett D, Judd M, Jaglal SB **Physical therapists' experiences updating the clinical management of walking rehabilitation after stroke: a qualitative study** pp556–568.

Volume 89:7

- Hancock M, Herbert RD, Maher CG **Guide to interpretation of studies investigating subgroups of responders to physical therapy interventions** pp698–704.
- Stemmons Mercer V, Freburger JK, Shuo-Hsiu C, Purser JL **Measurement of paretic-lower-extremity load-**

ing and weight transfer after stroke pp653–664.

- Tomey KM, Sowers MR **Assessment of physical functioning: a conceptual model encompassing environmental factors and individual compensation strategies** pp705–714.

Volume 89:8

- Beninato M, Portney LG, Sullivan PE **Using the international classification of functioning, disability and health as a framework to examine the association between falls and clinical assessment tools in people with stroke** pp816–825.
- Jau-Hong Lin, Miao-Ju Hsu, Ching-Fan Sheu, Tzung-Shian Wu, Ruey-Tay Lin, Chia-Hsin Chen, Ching-Lin Hsieh **Psychometric comparisons of four measures for assessing upper-extremity function in people with stroke** pp840–850.
- Lewek MD, Cruz TH, Moore JL, Roth HR, Dhaheer YY, Hornby TG **Allowing intralimb kinematic variability during locomotor training post-stroke improves kinematic consistency: a subgroup analysis from a randomized clinical trial** pp829–839.

PHYSIOTHERAPY RESEARCH INTERNATIONAL

Volume 14:1

- McCormack E, Liddiard H **Home or away? Community rehabilitation following traumatic brain injury: a case report** p 66–71.
- Piriyaarasath P, Morris ME, Delany C, Winter A, Finch S **Trials needed to assess knee proprioception following stroke** pp6–16.
- Wilson D, Williams M, Butler D **Language and the pain experience** pp 56–65.

Volume 14:2

- Durham K, Van Vliet PM, Badger F, Sackley C **Use of information feedback and attentional focus of feedback in treating the person with a hemiplegic arm** pp 77–90.

PHYSIOTHERAPY THEORY AND PRACTISE

Volume 25:1

- Bezerra de Figueiredo KM0, Costa de Lima K, Maciel ACC, Guerra RO **Interobserver reproducibility of the Berg Balance Scale by novice and experienced physiotherapists** pp30–36.

Volume 25:2

- Amusat N **Assessment of sitting balance of patients with stroke undergoing inpatient rehabilitation** pp138–144.
- Langhammer B, Stanghelle JK, Lindmark B **An evaluation of two different exercise regimes during the first year following stroke: a randomised controlled trial** pp55–68.

Volume 25:3

- Rindfleisch AB **A grounded-theory investigation of patient education in physical therapy practice** pp193–202.

Volume 25:4

- Smith JM, Sullivan SJ, Baxter GD **Telephone focus groups in physiotherapy research: potential uses and recommendations** pp241–256.

Volume 25:5 and 6

- Dean E **Physical therapy in the 21st century (Part I): toward practice informed by epidemiology and the crisis of lifestyle conditions** pp330–353.
- Dean E **Physical therapy in the 21st century (Part II): evidence-based practice within the context of evidence-informed practice** pp354–368.
- Rhodes RE, Fiala B **Building motivation and sustainability into the prescription and recommendations for physical activity and exercise therapy: The evidence** pp424–441.

Volume 25 Issue 7 2009

- Karin H, Filip S, Jo G, Bert A **Obstacles to the implementation of evidence-based physiotherapy in practice: a focus group-based study in Belgium (Flanders)** pp476–488.
- Jenkins S, Cecins N, Camarri B, Williams C, Thompson P, Eastwood P **Regression equations to predict six minute walk distance in middle-aged and elderly adults** pp516–522.

SHARING GOOD PRACTICE

Article responses

to 'What do student physiotherapists perceive the Bobath concept and Motor Relearning Programme to be and do they feel confident to use these approaches in stroke rehabilitation?' (Pinguey and Levis) in Synapse Spring 2009

From the British Bobath Tutors Association (BBTA)

Thank you for asking BBTA to respond to this interesting synapse article exploring undergraduate physiotherapy students' perceptions of the Bobath Concept and the Motor Relearning Programme, and confidence in using these approaches in stroke rehabilitation.

Although there are a number of methodological limitations within this study, we will not comment on these in this response.

As might be expected the majority were not confident in using either approach in their clinical practice.

More important than in depth understanding of specific approaches, the undergraduate physiotherapy student needs to have a foundation built on anatomy, biomechanics, movement analysis, neurophysiology, neuropathology, principles of motor control and motor learning. This knowledge then forms the basis of and confidence in assessment, treatment interventions and overall patient management. They also need to be aware that there are a number of different approaches in the treatment of patients with neurological problems but that developing in depth knowledge and confidence to practice comes with extensive postgraduate experience, specific training and ongoing reflective practice.

It is recognised by BBTA and other IBITA members that undergraduate training depends upon publications and over the last few years they have worked to disseminate the developments in the Bobath Concept within the literature rather than purely on postgraduate courses. Some examples of this would include; Raine, Meadows and Lynch-Ellerington 2009, Gjelsvik 2008,

Raine 2007, Luke, Dodd and Brock 2004, Vaughan-Graham et al 2009.

These publications enable those within the university environment to access the current theoretical underpinning and clinical practice of the Bobath Concept.

REFERENCES

Gjelsvik BE (2008) *The Bobath Concept in Adult Neurology* Thieme Stuttgart.

Luke C, Dodd KJ and Brock K (2004) *Outcomes of the Bobath Concept on Upper Limb Recovery following Stroke* Clinical Rehabilitation 18 pp888-898.

Raine S (2007) *Current Theoretical Assumptions of the Bobath Concept as defined by the members of BBTA* Physiotherapy Theory and Practice 23 (3) pp137-152.

Raine S, Meadows L and Lynch-Ellerington M (2009) *Bobath Concept; Theory and Clinical Practice in Neurological Rehabilitation* Wiley-Blackwell Oxford.

Vaughan-Graham J, Eustace C, Brock K, Swain E and Irwin-Carruthers S (2009) *The Bobath Concept in Contemporary Clinical Practice* Topics in Stroke Rehabilitation 57 (12).

From the motor relearning programme (MRP)

This is a very interesting study investigating physiotherapy students' understanding of and confidence in using the two most prevalent treatment approaches to stroke in the UK.

It was found that students had a poor understanding of both treatments and authors suggest some good reasons to explain this. Students also felt more confident in using MRP. This is rather surprising as the most commonly used approach in the UK is the Bobath approach so it would be expected that students would receive a greater amount of expert tuition in this treatment than MRP on their neurological clinical placements. So it will be very interesting to find out more about why students felt more confident in using the MRP. For example, reasons may include the fact that the approach to analysis of the movement problems is systematic and easy to follow, or the fact that there is current literature widely available to describe how to implement the approach. This information might be more easily elicited from subjects via one to one interviews or focus groups and these methods should be included in future studies as the questionnaire alone does not seem to have produced enough explanatory information.

The next point is perhaps a minor one, but the treatment framework described by Carr and Shepherd has not been named the 'Motor Relearning Programme' in recent texts from these authors. A more appropriate name would be a 'movement science based approach' to stroke rehabilitation. This is because, although the treatment does emphasise the patient as an active learner, there are other foundations for the treatment, apart from motor learning, that have emerged from the movement science literature. I believe the authors are correct in describing this treatment as involving 'optimisation of motor performance and functional abilities through task oriented rehabilitation, which should be context specific' and several core principles are listed which I would agree are key. The description could be more detailed however, perhaps including important elements such as the underlying biomechanical basis for analysis of movement, an understanding of how the brain controls the functional movements, the repetitive nature of the practice and how practice and feedback are used in a structured manner to enhance learning. There are also analyses of the content of this treatment from independent authors such as

Lettinga (Lettinga 1999 #11) that could be incorporated into the description.

In this study, it was found that 87.5% of students chose an eclectic approach and that they tailored rehabilitation to the patient. This seems a very positive sign, as the time for rigidly applying one approach or the other is fast disappearing, driven by the emergence of a rich evidence base about specific interventions for stroke, such as constraint-induced therapy or robotics, that do not necessarily align with a particular complex intervention. In the future, it may be more useful to expand this type of inquiry to students' confidence and understanding of specific interventions such as these, whilst still exploring attitudes to the complex interventions that physiotherapists currently apply. In other words we need both top down approach where we study the whole complex intervention as well as a bottom up approach where individual components of treatment are assessed, as advocated by Marsden and Greenwood (Marsden 2005 #808).

The point is made in the discussion that a lack of Bobath teaching at undergraduate level is a barrier to students' knowledge. It would be interesting to explore this hypothesis further, as this may also be the case for the movement science based treatment. At postgraduate level, it seems that Bobath teaching is more widely available than teaching on the movement science based intervention, so a investigation of teaching at both levels via survey methods could inform this hypothesis.

I would like to thank the editor of *Synapse* for offering the opportunity to comment on this study, which raises some thought provoking ideas about education of physiotherapy students in this field.

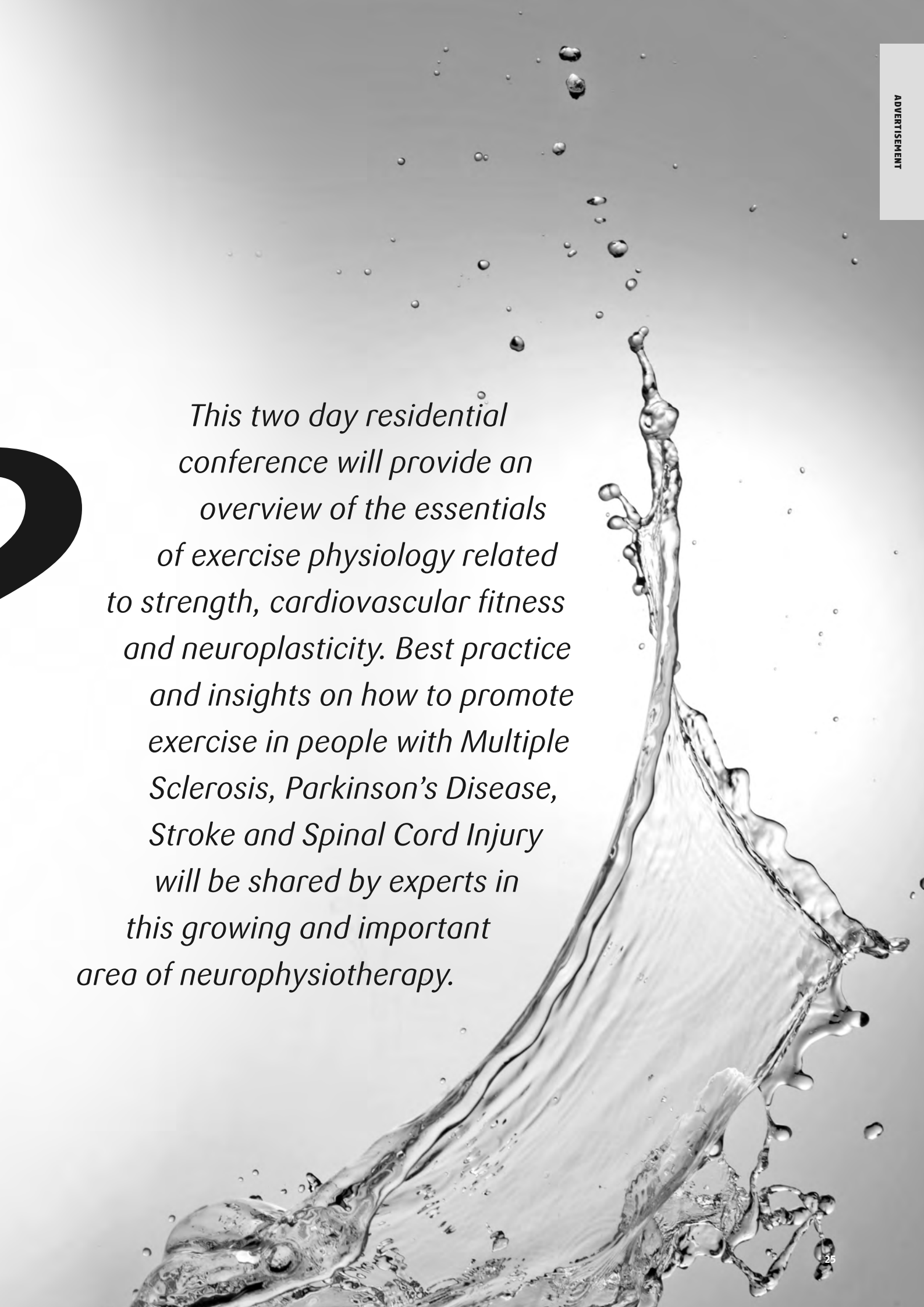
Paulette van Vliet Division of Physiotherapy Education, School of Nursing, Midwifery and Physiotherapy, University of Nottingham

NB There is postgraduate teaching available on the Movement Science base approach to stroke rehabilitation (9 day course, 30 credits) at the University of Nottingham, within the MSc Physiotherapy (Neurorehabilitation). This particular module can be taken alone, without registering for the masters degree. Enquiries to: Marjan.Blackburn@nottingham.ac.uk.

fit for life. exercise & neurology

***ACPIN National Conference and AGM 2010
Northampton Hilton
Friday 19th and Saturday 20th March***

Go to ***www.acpin.net*** for further details and an application form.



This two day residential conference will provide an overview of the essentials of exercise physiology related to strength, cardiovascular fitness and neuroplasticity. Best practice and insights on how to promote exercise in people with Multiple Sclerosis, Parkinson's Disease, Stroke and Spinal Cord Injury will be shared by experts in this growing and important area of neurophysiotherapy.

NEWS ACPIN

Interactive CSP update

Chris Manning iCSP link moderator for neurology

iCSP is going from strength to strength and is a valuable tool for members to share ideas and documents. The neurology network, owned by ACPIN, now has 7,692 registered users.

Most of the items submitted to the neurology network are discussions these allow exchange of ideas and views as well as request for information. Do search the network to check if there is already a discussion on a topic and remember only to use the email members option if an urgent reply is needed. If you have an example of good practice or your own research you wish to communicate use the 'sharing practice' area.

Exercise has featured frequently in recent discussions eg balance exercises, Pilates, the use of the *Nintendo Wii*® in rehabilitation and exercise groups in the community. Other common themes include: outcome measures, goal setting, information for people with newly diagnosed neurological conditions and walking aids. If you have opinions on any of these topics look up the discussion and share your views.

There have been some really useful documents added to the site, particularly guidelines, outcome measures, and interesting and relevant research.

To make the links between the ACPIN executive and iCSP more apparent and interdependent the content from iCSP will be used to inform the topics for future events. Exercise is the theme for the ACPIN residential conference in March and the discussions highlighted above can enlighten our debate.

The 4th UK Stroke forum is being held in Glasgow from 1–3 December 2009. See iCSP for details and to submit related content.

www.interactivetcsp.org.uk

Apology

Emma Heathcote and Jo Pierce

We wish to apologise for the absence of the third named author in the abstract (see below) that was submitted for conference in March 2009 (printed in *Synapse* Spring 2009). Charlie Winward's contribution was fundamental to the completion of this piece of work.

GRASPING THE CONCEPT:

SAEBOFLEX® AT THE OXFORD CENTRE FOR ENABLEMENT (OCE)

Emma Heathcote, Jo Pierce and Charlie Winward

Abstract:

BACKGROUND AND PURPOSE – Following a neurological injury, the prognosis of recovery in the arm and hand is generally poor. The current Oxford Centre for Enablement (OCE) approach to upper limb rehabilitation includes a functional upper limb group for patients with a Rivermead Motor Assessment (RMA) score of $\geq 3/15$ (arm). However, many patients do not fulfil this criteria and to date, for those individuals with little power or functional return in their hand, therapy options are often reduced. Recently a novel treatment approach called the SaeboFlex® became available. This uses a dynamic hand splint designed to position a patient's hand at a biomechanical advantage, so that grasp and release activities are possible and can be practiced independently. A clinical service audit was conducted to determine the addition of this hand splint to upper limb rehabilitation at OCE.

METHODS – An audit cycle provided the framework for criteria setting, data collection and analysis of results. Patients were included if they fulfilled the physical parameters for SaeboFlex® training and wanted to participate. Baseline measures were recorded for all SaeboFlex® users prior to upper limb training, the Modified Ashworth Scale (MAS)⁹,

RMA arm and Motricity Index (MI). All measures were then repeated at six months. In addition, training intensities were recorded.

RESULTS – Over a twelve month period, 23 patients commenced SaeboFlex® training. Eleven complete sets of data were collected (six male, five female, six left, five right, mean age 55.8 years (s 11.7). Before testing RMA mean 4.5 (s 3.5), MI mean 58.4 (s 21.1) and MAS mean 2.5 (s 2.3). Post testing RMA mean 6.7 (s 3.5), MI mean 77.3 (s 14.4) and MAS mean 3.4 (s 2.5). The mean training intensity was seven sessions per week (s 3.9), 39 minutes per session (s 10.4). Having trained with the SaeboFlex®, two patients who would have previously been excluded, were then eligible to attend the upper limb group.

CONCLUSIONS – More patients were able to access the upper limb group than previously. The increase in both the RMA and MI are indicative of an increase in function for SaeboFlex® users. An increase in MAS was also noted. Robust research is necessary to determine the effect of SaeboFlex® in upper limb rehabilitation.

NEWS GENERAL

Latest issue of *Stroke Matters* now available

Produced by The Stroke Association, *Stroke Matters* is a quarterly e-publication for professionals with an interest in stroke. It covers interesting and accurate news on stroke issues, carefully selected by an expert multi-disciplinary editorial board comprising of leading stroke specialists.

This issue includes updates on stem cells in stroke, childhood stroke, the use of telemedicine and skills training for stroke care, along with research updates across the stroke care pathway.

The fourth issue is now available. To subscribe for free, please visit www.stroke.org.uk/strokematters and complete the online subscription form.

Spasticity in adults: management using botulinum toxin National guidelines

These new guidelines published by the Royal College of Physicians (ACPIN were involved in the development), provide clinicians with the knowledge and tools to use BT effectively. If used according to the guidance, BT can improve the lives of those suffering from spasticity and of those caring for them, as well as reducing the overall costs of ongoing care.

The guidance is essential reading for all clinicians dealing with stroke patients, people with multiple sclerosis and patients with severe traumatic brain injury.

The guide costs £20.00. For more information and to purchase online please visit: www.rcplondon.ac.uk/pubs/brochure.aspx?e=272

Launch of Quick Reference Cards:UK for physiotherapists working with people with Parkinson's Disease Bhanu Ramaswamy MSc

In 2004 the Royal Dutch Society for Physical Therapy (KNGF) published the *Guideline for Physical Therapy in patients with Parkinson's Disease* (Keus et al 2004), guidelines which provide the best available evidence for use in clinical practice.

An innovative feature of the KNGF 'Dutch' guidelines is the inclusion of four *Quick Reference Cards* designed to directly support clinical practice at any stage of Parkinson's Disease, in the clinic, on the ward or in community settings. These are of particular importance as most physiotherapists do not work in specialist centres where they have the opportunity of working with large numbers of patients with Parkinson's Disease.

The UK version of the *Quick Reference Cards (QRC: UK)* was launched at the recent National Conference on Parkinson's Disease hosted by AGILE in Glasgow in October 2009 and are an adaptation of the KNGF guidelines making them more appropriate for clinical use in the UK.

The development of the UK guidelines was initiated by the Parkinson's Disease Society in the UK and taken forward by a group of nationally recognised clinical, research and academic physiotherapists. Bhanu Ramaswamy, Consultant Physiotherapist has led the group in her role as Project Officer for Parkinson's Disease for both AGILE (Chartered physiotherapists working with older people) and ACPIN. Bhanu is also currently part of a national group hosted by the PDS and British Geriatric Society involved in planning a national audit tool for physiotherapists working with people with Parkinson's Disease in preparation to review implementation of the *NICE Guidelines for PD* published in 2006.

The QRC: UK will provide a means

of standardised guidance for physiotherapists. They relate to best practice in Parkinson's Disease and cover the diagnostic processes (*QRC 1: History-taking; QRC 2: Physical examination*), and the therapeutic processes (*QRC 3: Specific treatment goals and QRC 4: Treatment strategies*). The cards are so designed that each of the four areas under examination fit on a single page of A4. The clinician can print and laminate, and hence place the cards in an accessible area for quick reference.

The *QRC: UK* can be accessed from both the 'Neurology' and the 'Older Peoples' networks on interactive CSP at www.interactivesp.org.uk/

Similarly from the Parkinson's Disease Society website in the section on publications for the Professionals at www.parkinsons.org.uk/for_professionals.aspx

The UK guidance notes should also be read in conjunction with the

original guidelines found at www.fysionet.nl/dossier_files/uploadFiles/Eng_RichtlijnParkinsons_disease_251006.pdf as these provide a full explanation of how to use the original guidelines, a glossary of terms, examples of the measurement tools considered, and, suggested strategies to aid movement.

References

Keus S, Hendriks H, Bloem B, Bredero-Cohen A, de Goede C, van Haaren M, Jaspers M, Kamsma Y, Westra J, de Wolff B, Munneke M (2004) *Clinical practice guidelines for physical therapy in patients with Parkinson's disease* Supplement of the Dutch Journal of Physiotherapy; 114 (3).

National Institute of Clinical Health and Excellence (2006) *CG35: Parkinson's Disease: diagnosis and management in primary and secondary care* London, RCP.

The MuSmate Walking Aid for Foot Drop



Key Features

- Supports knee and/or hip flexion
- Control foot lift height- users can even climb stairs
- Wear over or under clothes
- Range of Colours
- Prices from £75

Benefits

The Musmate Walking Aid was developed by people with foot drop to support their own walking. An elastic cord joins a shoulder harness to a shoe connector which allows the Musmate to support the movement of the whole leg. The strength of the support is adjustable as is the height to which the foot is lifted. Trial results showed a statistically significant improvement in walking speed over a one month period (see website for details).

Contact Details

Musmate Ltd, PO Box 3976, Bath, BA1 0DF

T (0845) 094 4674

E sales@musmate.co.uk

F (0845) 094 4674

W www.musmate.co.uk

MuSmate

ACPIN @ CSP Congress 2009



The Chartered Society of Physiotherapy

Congress 2009 was held on 16-17 October 2009 at the BT Convention Centre, Liverpool.

The full programme covered six main areas of content. ACPIN was involved in organising the neurology part of the programme.



Professor Louise Ada (far left, our keynote speaker) with (from left to right) Dr Sarah Tyson (invited speaker), Dr Cherry Kilbride (ACPIN co-chair), Jo Tuckey (ACPIN co-chair) and Siobhan MacAuley (ACPIN vice-chair and organiser of this year's neurology strand).

FRIDAY SESSION 1

Contribution of motor impairments to physical activity after stroke

Professor Louise Ada Associate Professor, University of Sydney

Abstract

A major concern of neurological physiotherapists is the relative contribution of the positive versus negative impairments to activity limitations in neurological conditions. It is now commonly understood that the major contribution to disability after stroke is not the result of the positive impairments, ie spasticity, but rather the negative impairments, ie loss of strength and dexterity. This has led to a shift in focus of rehabilitation towards the treatment of weakness and incoordination. Recent descriptive studies suggest that weakness is a more important contributor to disability after stroke than incoordination. Furthermore, there is increasing evidence, summarised in a recent systematic review, that strength can be increased after stroke, with a positive effect on function and without increasing spasticity. Yet, it is possible that insufficient attention is given to strength training in rehabilitation of individuals after stroke because of the commonly-held assumptions that not only is spasticity the most important contributor to disability but that resisted exercise will increase spasticity. It now remains to identify the most effective methods of increasing strength early after stroke, especially at short muscle lengths. It is important for physiotherapists to understand as much as possible about the nature of these impairments in different neurological conditions as well their relative contribution to activity limitations in order that rehabilitation has a sound scientific basis.

Biography

Louise Ada is a physiotherapist who is an associate professor in the Discipline of Physiotherapy at The University of Sydney with an interest in neurological rehabilitation. She is particularly interested in the relative contribution of impairments to disability as well as the efficacy of physiotherapy interventions and the design of environments to promote the active participation of people undergoing rehabilitation.

The role of the neurological physiotherapist as an expert witness in medico-legal practice

Sue Edwards Director of Edwards Associates and part-time clinical specialist physiotherapist, National Spinal Injuries Unit, Stoke Mandeville Hospital

Abstract

Neurological physiotherapists have a vital role to play as expert witnesses in the medico-legal process. This may be in determining issues of liability with regard to whether or not a treating physiotherapist has been negligent in their practice (this is only a small proportion of the work) or, more commonly identifying the current and on-going physiotherapy needs in respect of quantification of the claim following appropriate assessment.

This presentation aims to:

- Provide an overview of the medico-legal process
- Discuss what attributes are required to be an expert witness
- Clarify what the lawyers and others expect from the expert physiotherapy report

Biography

Sue Edwards qualified as a physiotherapist in 1971 from the Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry. Her exposure to the treatment of spinal cord injured people during her training led her to pursue a career specialising in neurology. Her current posts include: expert witness in medico-legal cases of adults and children with neurological disability and part-time clinical specialist, Spinal Injuries Unit at Stoke Mandeville Hospital.

Sue is the author of *Neurological Physiotherapy: A Problem-solving Approach*. The first edition was published in 1996 and the second in 2002. She has also contributed chapters to several other neurological texts.

She taught extensively from 1980 to 2006 both nationally and internationally. Topics included:

- Treatment and management of hypertonia / spasticity
- Treatment and management of patients with incomplete spinal cord injury
- Treatment and management of patients following acquired brain injury
- The use of splinting for adults and children with neurological disability
- Treatment and management of children with cerebral palsy
- Analysis of normal movement

She became a committee member of the Medico-legal Association of Chartered Physiotherapists in 2005 and is currently the Vice Chair of this group. More recently she has lectured on courses relating to medico-legal practice.

She was awarded a Fellowship of the Chartered Society of Physiotherapy in 1995 and was President of the Association of Chartered Physiotherapists with an Interest in Neurology (ACPIN) from 1998 to 2002.

FRIDAY SESSION 2

Some thoughts on the measurement of spasticity

Professor Michael Barnes Honorary Professor of Neurological Rehabilitation, Newcastle University

Abstract

Spasticity is difficult to measure. The lack of a clear definition clearly hinders precise measurement.

In a clinical setting the Ashworth or Modified Ashworth scale is the most commonly used and indeed these scales are by far the most common quoted in the research literature. However, there has been significant criticism that the Ashworth scale is not entirely reliable, is not good at measuring milder spasticity

and is not a good tool to measure ongoing clinical change. An alternative is the Tardieu scale. This is a composite measure of spasticity but, once again, it is difficult to perform and reliability has been questioned.

An alternative approach is to use biomechanical measurements, such as the Wartenberg pendulum test. This is reasonable to use but is really only relevant in cases of mild spasticity when a limb can swing freely. There are other powered systems that have been used but these are not practical in a clinical setting. Indirect biomechanical approaches can also be used, such as gait analysis. Gait analysis has a role in the management of some aspects of spasticity, such as the relevance of orthotics but is clearly impractical for most day-to-day spasticity treatment. There are a number of neurophysiological approaches to spasticity measurement, such as analysis of tendon jerks, H reflexes and F waves but these are really only useful in a research setting.

As spasticity is a subjective phenomenon then it makes sense for the patient's own perception to be taken into account. There is emerging literature of the usefulness of simple tools, such as visual analogue scales to monitor the patient's perception of their own spasticity. If an individual is not able to complete such a scale (such as in the context of severe brain injury) then the measured opinion of the key family member or carer can be used.

I will discuss the merits and drawbacks of these measurement techniques and come to the conclusion that we should use subjective measures as the mainstay of our clinical management of spasticity.

Biography

Mike Barnes is an accredited neurologist and rehabilitation physician. His clinical work has, for the last 20 years, focused entirely on the rehabilitation of people with severe and complex disabilities. He has a particular interest and expertise in the management of dystonia and spasticity and the use of botulinum toxin. He was responsible for the development of Walkergate Park, International Centre for Neurorehabilitation and Neuropsychiatry (formerly Hunters Moor Regional Neurological Rehabilitation Centre) – a brand new, state of the art, nationally and internationally recognised centre of excellence for people with neurological problems, particularly following traumatic head injury. Walkergate Park has one of the largest botulinum toxin services in the UK. In December 2007, he retired from the National Health Service to concentrate on setting up and running Hunters Moor Neuro Rehab Ltd and Hunters Moor Residential Ltd (www.huntersmoor.com) – a rehabilitation service provided into client's homes and, in the near future, in a network of high quality residential treatment centres across the UK.

He is recognised at a national and international level in the field of neurological rehabilitation. He is Founder/Past President of the World Federation for NeuroRehabilitation (www.wfnr.co.uk) – a global organisation for professionals with an interest in the field of neurorehabilitation. He is currently Chairman of the United Kingdom Acquired Brain Injury Forum (UKABIF). He has been President of the British Society of Rehabilitation Medicine (1994–1996) and Chairman of the Royal College of Physicians of London Joint Speciality Committee for Rehabilitation Medicine.

He has produced over 100 articles for peer review journals and has written or edited nine books in the field of neurological rehabilitation and has produced many chapters for such books. He has presented widely on the subject of neurological rehabilitation both nationally and internationally. He is on the Editorial Board for many journals in the field.

Spasticity in adults: management and practice implications for using botulinum toxin

Stephen Ashford Clinical Specialist & Research Physiotherapist, Northwick Park Hospital and Honorary Research Fellow, Department of Palliative Care, Policy and Rehabilitation, King's College London

Abstract

Spasticity is over activity in muscles, which can follow brain injury. Damaged parts of the brain, which would normally cause muscles to 'relax', no longer work in the same way and instead muscles may contract when not required to do so¹.

In addition muscles, which contract most of the time, are likely to become short and stiff. This makes stretching the muscle much more difficult. If left untreated, the muscle can become permanently shorter leading to secondary problems. For example if spasticity in the arm and hand are not managed in some cases this will lead to inability to open the hand and clean the palm or cut finger nails¹.

Principles of spasticity management

Spasticity management requires a 24-hour approach

- Maintaining and changing body positions to avoid muscle shortening
- Supporting the body where needed in a wheelchair or in bed
- Avoiding aggravating factors such as pain, infection or constipation

Botulinum Toxin Injection

Botulinum toxin (BT) is a treatment that weakens or paralyses specific muscles to reduce spasticity and make it easier to stretch the muscles. The effects of BT are usually greatest two to six weeks following injection and usually fade completely after three to six months. In general, BT cannot be used to treat widespread severe spasticity, since the amount of drug required to bring about meaningful functional improvements would need to be greater than the currently recommended maximum dose. BT is used in spasticity management as an adjunct to physical management intervention such as positioning or splinting and should be viewed as a combined or complex intervention with these other modalities.

Outcome measurement

The guidelines for the management of spasticity with botulinum toxin have highlighted the importance of measuring the impact of interventions at the level of improved function and reduction of the impact of spasticity on patients and their carers¹. Goal Attainment Scaling and the Arm Activity Measure are both methods of measuring outcomes following botulinum toxin intervention. Both these measures have been shown to be useful in demonstrating functional improvements of importance to patients following BT¹.

Reference

1. Spasticity in adults: management using botulinum toxin. National guidelines. London: RCP, 2009. (<http://www.rcplondon.ac.uk>)

Biography

Steve trained in Physiotherapy at Salford University and qualified in 1993. He completed an MSc in Neurorehabilitation at Brunel University in 1998. Then undertook a Post Graduate Certificate in Education through the University of

Greenwich while working at the Royal Hospital for Neurodisability, Putney. He subsequently became part-time lecturer and course director for the MSc Neurorehabilitation at Brunel University from 2001 until 2003, while working clinically at the Regional Rehabilitation Unit, Northwick Park Hospital.

Since 2003 Steve has been full-time clinical specialist and research physiotherapist at the Regional Rehabilitation Unit, Northwick Park Hospital and Honorary Research Fellow, Department of Palliative Care Policy and Rehabilitation, King's College London. Steve is currently part way through a PhD at King's College London investigating the measurement of arm function following focal interventions, such as botulinum toxin for arm spasticity. Steve has published a number of peer-reviewed papers in the rehabilitation literature as well as book chapters and clinical guideline contributions.

FRIDAY SESSION 4 What the commissioners want

Louise Rogerson Service Reform Lead for Clinical Pathways

Abstract

This lecture will provide an overview of the current payment mechanisms for services in the community and hospital setting using practical examples relevant for our practice. The competency framework from World Class Commissioning will be explained, along with the PCT performance measurement including this year's targets and performance framework. By demonstrating the broader context in which the PCT operates, the prioritisation of commissioning decisions will be explored alongside the process of commissioning redesign.

The second half of the lecture will focus on the practical implications of these processes. This will include examples of service reform to demonstrate how clinician's can guide this redesign whilst achieving the commissioning expectations. It will also provide insight on who to involve in these projects, how to identify political drivers and outcomes to build a business case, and provide practical advice on the type of information that commissioners can relate to. Opportunities to place neurological services on the commissioning agenda will be explored within the current healthcare agenda.

Biography

Louise Rogerson qualified as a physiotherapist from the University of East London in 1995. After junior rotations at the Royal London Hospital, she specialised in neurology, working at the Regional Neurorehabilitation Unit in Homerton, and then moving to work at the University Hospital of South Manchester in 2000. After working privately in the community and completing masters level research at the University of Salford, Louise started working at South Manchester PCT as a service improvement manager with a focus on tier two interface services. Following an 18 month secondment Louise has now secured a permanent post as the service reform lead for clinical pathways within the commissioning directorate at Trafford PCT. Her work involves performance management of several key PCT targets including the large CVD agenda (including prevention and rehabilitation), diabetes management, cancer, and palliative care. Louise also continues to work privately as a neurophysiotherapist, and is currently the Honorary Minutes Secretary for National ACPIN.

SATURDAY SESSION 1

A framework for physiotherapy interventions in Huntingtons Disease: the ongoing processes

Monica Busse PhD MSc (Med) BSc (Med) Hons BSc (Physio) Department of Physiotherapy, Cardiff University

Abstract

Physiotherapy is being more frequently recommended for people with Huntington's Disease (HD) although literature reviews have highlighted the need to utilise appropriate outcome measures and to document interventions provided across the spectrum of the condition. The Cardiff Physiotherapy Group (CPG) alongside the European Huntington's Disease Network (EHDN) Physiotherapy working group has utilised a staged process to develop a Framework for Physiotherapy Interventions for people with HD.

A series of qualitative studies have been undertaken to characterize current physiotherapy practice and guide provision of interventions in this group of people. Further cross-sectional studies evaluating potential physiotherapy outcome measures for use in HD were also conducted. The findings of this exploratory work was presented to the EHDN Physiotherapy working group during the recent development process of the *Guidance Document for Physiotherapy*. Physiotherapy expert sub-groups were formed to interpret currently available literature and incorporate consensus as to best practice guidelines. A draft document was distributed to the entire membership of the working group, to other health care professionals of EHDN to elicit feedback and comments. Feedback was incorporated into the final document.

A guidance document covering eight specific areas pertaining to physiotherapy management of HD has now been developed. During this presentation, the staged process towards developing a Physiotherapy Framework and Guidance for Physiotherapy Interventions in HD will be described.

Biography

Monica Busse works as a lecturer and researcher in the Department of Physiotherapy, Cardiff University. Her research focuses specifically on neurodegenerative conditions and the related physiotherapy issues. This includes the assessment and management of mobility problems and has strong links with the specialist Huntington's disease (HD) Clinic based in Cardiff. HD serves as a paradigm for neurodegeneration – although it is a relatively rare condition, it is a good model for investigating treatments in that it can be isolated to a single gene, can be diagnosed in life and results in focal degeneration. Current projects include the development of home based interventions for people with HD at risk of falls, investigation of respiratory function in people with HD as well as evaluation of utilisation of rehabilitation services across Europe. Other projects are linked to the European Huntington's Disease Network (EHDN) Physiotherapy Working Group for defining physiotherapy practice, developing guidance for physiotherapists working with HD and determining best outcome measures to assess efficacy of physiotherapy interventions.

Bladder and bowel dysfunction in the neurological patient

Dr Doreen McClurg NMAHP Research Unit, Glasgow Caledonian University

Abstract

Bladder and bowel dysfunction are a common symptom of most neurological conditions often with significant detrimental impact on overall quality of life. For example up to 98% of people with multiple sclerosis will have bladder problems at some stage during the course of their disease, be it as an initial symptom or later when mobility is impaired. Following a CVA incontinence can occur either as a result of impaired mobility or impaired awareness and often defines discharge to home or long-term residential care with high economic cost implications. It is important that during rehabilitation physiotherapists are aware of the incidence, causes, social implications and potential therapies which may be used to reduce the severity of symptoms and improve quality of life. During this talk simple strategies for educating patients and carers are outlined as are possible referral pathways for those with more severe problems.

Biography

Dr Doreen McClurg worked for many years as a Women's Health physiotherapist in the Belfast City Hospital, undertaking the post-graduate Diploma in Continence in 2000. An interest in multiple sclerosis and continence problems developed and a PhD was completed in 2006. A Clinical Specialist post in Continence followed and more recently a move to the Nursing Midwifery and Allied Health Professions Research Unit at Glasgow Caledonian University has allowed her to further develop an interest in research and continence.

SATURDAY SESSION 2

Understanding the neurologically unexplained symptoms

Dr Mike Dilley Consultant Neuropsychiatrist, CNWL NHS Foundation Trust and National Hospital, Queens Square

Abstract

Unexplained symptoms are commonplace in patients attending neurology services. Practitioners are often at a loss as to how to 'explain the unexplained', let alone develop treatment strategies and management plans that result in functional improvements. This lecture will introduce the concepts behind neurologically unexplained symptoms and provide some practical advice about how to approach patients and answer their questions.

Biography

Dr Mike Dilley trained at King's College and completed his specialist training at The Maudsley Hospital, Institute of Psychiatry and National Hospital for Neurology & Neurosurgery. He continues to hold an Honorary Consultant Neuropsychiatrist appointment at Queens Square and The Blackheath Brain Injury Rehabilitation Centre. He is a member of the Executive Committee of the Section of Neuropsychiatry, Royal College of Psychiatrists.

Practical considerations for a physical rehabilitation approach to unexplained neurological symptoms

Sarah Edwards Highly Specialised Physiotherapist, National Hospital for Neurology and Neurosurgery

Abstract

Key features of clinical presentation relevant to physiotherapy

- Principles of assessment and treatment
- Relevant outcome measures
- Top management tips

Biography

Sarah Edwards qualified as a physiotherapist in 1999 from the University of East London. She has specialised in adult neurology for the past eight years and has been working as a senior physiotherapist at the National Hospital for Neurology and Neurosurgery, Queens Square, London for the last five years. Over the past two years she has worked as the lead physiotherapist for the neuropsychiatry service gaining extensive experience working with patients with unexplained neurological symptoms.

SATURDAY SESSION 3

Rehabilitation after stroke: how should it be delivered?

Professor Louise Ada Associate Professor, University of Sydney

Abstract

Rehabilitation for the person after stroke involves labour-intensive treatment. Investigations in the 1980's found that patients spent the majority of their day alone and inactive and that therapy occupied a small percentage of the day. Disappointingly, the findings of recent investigations into physical activity in rehabilitation units identified a similar situation, ie, most of the time outside therapy was spent alone and inactive while most physical activity occurred in the therapy area where patients spent only a small proportion of the day. These findings suggest that, currently, rehabilitation units do not function as learning environments and that the therapy area is an isolated area of physical activity. There is a need to introduce interventions that will increase the amount of practice undertaken because the amount of physical activity undertaken in rehabilitation has been shown to be related to outcome. Furthermore, interventions should be implemented in a way that does not solely rely on increasing the numbers of therapists.

Biography

Louise Ada is a physiotherapist who is an Associate Professor in the Discipline of Physiotherapy at The University of Sydney with an interest in neurological rehabilitation. She is particularly interested in the relative contribution of impairments to disability as well as the efficacy of physiotherapy interventions and the design of environments to promote the active participation of people undergoing rehabilitation.

SATURDAY SESSION 4

Research trial: acute management of whiplash injuries

Professor Sallie Lamb Director, Warwick Clinical Trials Unit, Warwick Medical School

Abstract

To evaluate the effectiveness and cost-effectiveness of treatments used in the management of acute whiplash injuries. **Methods:** We recruited over 3000 participants from 16 emergency departments across England. Departments were randomised to provide either usual care advice or active management advice and a copy of the *Whiplash Book*. Participants who reported they were struggling to recover at three weeks were randomised a second time to receive either a single session of advice from a physiotherapist or up to six sessions of a physiotherapy package comprising manual therapy, exercise and advice. Participants were followed up for 12 months, using a range of disease specific and generic health outcome measures. A cost evaluation and qualitative study was run in parallel alongside the main trial.

Results

There was no difference in the outcomes between the advice packages. The active management advice and whiplash book cost more than usual care advice, without securing additional clinical benefit. There was some evidence that the intensive physiotherapy package was associated with slightly larger symptomatic benefit at four months, but there was no impact on health related quality of life nor on longer term clinical outcomes. The intensive physiotherapy package was not cost effective at current levels of willingness to pay.

Conclusions

This trial was commissioned by the NHS to determine the effectiveness and cost-effectiveness of acute treatments for whiplash. We will describe how trials are used to determine cost effectiveness for the NHS, and importantly, how we might build on this work to design and deliver effective and cost-effective treatments for the management of whiplash in the future.

Biography

Professor Lamb qualified in 1986 from Salford School of Physiotherapy, and has worked in the UK, Australia, New Zealand and the United States. She was awarded an MSc in Rehabilitation with Distinction from Southampton University in 1991, and a DPhil from Oxford University in 1998. She was awarded a Harkness Fellowship in 1995 to study fall and disability prevention in older people in the United States of America. She is a member of the Chartered Society of Physiotherapy and a Fellow of the Royal Statistical Society. Her current position at the University of Warwick is that of Director of the Clinical Trials Unit and Professor of Rehabilitation. In addition she holds the Kadoorie Professorship of Trauma Rehabilitation at the University of Oxford. She was awarded a National Institute of Health Research Senior Investigator Award in 2008 in recognition of outstanding contributions to patient centred research in the National Health Service. Professor Lamb's research interests span clinical trials methodology, with particular application in gerontology, musculo-skeletal sciences, physiotherapy and more latterly, critical and emergency healthcare.

A clinician's guide to the ins and outs and highs and lows of doing research

Dr Sarah Tyson Senior Research Fellow, Centre for Rehabilitation and Human Performance, University of Salford

Abstract

With the advent of Best Research for Best Health leading to The Government's focus on applied clinical research and development of the National Institute for Health Research, there has never been more opportunity for physiotherapists to get involved in research.

This presentation will consider how you can get involved, from dipping one's toe to pushing back the frontiers of science. It will consider the political context, the whys and wherefores and give topical tips, handy hints and adversity avoidance strategies.

Biography

Dr Sarah Tyson is a physiotherapist and Senior Research Fellow in the Centre for Rehabilitation and Human Performance Research and the Physiotherapy Directorate at the University of Salford where she leads research programmes into clinical outcome measures and postural control and mobility problems in neurological conditions. She uses a wide range of methodologies to develop new measurement tools, explore the use of measurement tools in clinical practice, characterise and understand patients' postural control and mobility problems, evaluate the effectiveness of physiotherapy and assistive devices and develop novel interventions and measurement tools. She has over fifty peer-reviewed publications and has received over £2.5 million in research funding from the Department of Health, research councils, medical charities and professional bodies. Outside the University, Sarah is President-elect for the Society of Research in Rehabilitation, President of the Physiotherapy Research Society and Chair of the North West Stroke Research Network's Steering Group, an associate faculty member of the National Institute of Health Research and works closely with the Greater Manchester Cardiac and Stroke Clinical Services Network to re-design and improve stroke services.

FIVE MINUTES WITH...

Louise Ada

What/who have been key influences on your clinical practice?

Obviously being taught by Janet Carr and Roberta Shepherd and working with them for 20 years has been a big influence on my career.

They taught me to question assumptions and test hypotheses. They also inspired my love for training patients and teaching physiotherapists.

How has neuro physiotherapy changed since you first qualified?

The major change is the incorporation of movement science into the theoretical framework underlying physiotherapy. No longer is our intervention based solely on neuro-physiological concepts, but includes a wide range of other relevant sciences, such as biomechanics, motor learning, muscle biology, and cognitive psychology. The process of deriving clinical implications from research has provided us with interventions which can be tested in randomised controlled trials and more recently, evidence based practice has come to the fore. Science- and evidence-based neurological physiotherapy is now the norm.

If you were to give a physio one small piece of advice...

I have two!

1. Develop skill in analysing the contribution of impairments to disability so that your intervention is most likely to be effective.
2. Develop the attribute of perseverance. There are no quick magic cures in neurological physiotherapy.

What research has the potential for the greatest clinical impact?

Research that has the potential to change our fundamental assumptions, such as the research done over the past few decades that challenged the assumption that spasticity was the major determinant of physical disability which paved the way to increase the focus on strength and task training.

What do you think the future holds?

Firstly, more sharing of ideas and resources. For example, every country, if not every state, seems to be developing clinical practice guidelines. This is an incredible amount of duplication which seems unnecessary given the current ability to share information using the internet. It is to be hoped that the scope and availability of online resources (such as www.physiotherapyexercises.com – a free website developed by physiotherapists in Sydney for assisting physiotherapy students, physiotherapists and patients) will be expanded.

Second, further development and testing of technology designed to enhance intervention, such as neuroprostheses, robotic therapy and computer games used to encourage physical activity.

What would be on your wish list for the future?

To walk into any neurological therapy area and see every patient practicing.

FOCUS ON...

Wales

Developing Stroke Research in Wales: the OPAN Stroke Research Interest Group

Dr Allison Cooper Stroke Research Portfolio Development Fellow

Research should be an integral part of all stroke services to help develop the evidence base for the ongoing benefit of staff and patients, yet participation in stroke research is low in Wales. A key objective of the Older People & Ageing Research & Development Network (OPAN Cymru), one of the Thematic Research Networks within the Clinical Research Collaboration Cymru (CRC Cymru), is to develop stroke research in Wales. The OPAN Stroke Research Interest Group (SRIG) has been set up to address this priority.

The SRIG brings together a multidisciplinary team of stroke practitioners from NHS Wales and academic researchers from Swansea, Cardiff, Bangor and Glamorgan universities. The first full meeting took place in Cardiff on 19th April 2007. The SRIG meets three times per year. A web presence for the SRIG has been built into the existing OPAN web site: www.opanwales.org.uk and a regular email bulletin is distributed to anyone who is interested in research with details of funding sources, research training, conferences and the latest published research (to join the email distribution list send your details to the SRIG coordinator, Christine Stock at: c.stock@swansea.ac.uk or telephone 01792 513269.)

The key aim of the SRIG is to increase research capacity in Wales by:

- Enhancing the quality and volume of research
- Improving the integration of policy, practice and research around stroke care
- Improving the coordination of research both across and within health, social care and clinical specialisms
- Strengthening research collaborations across and within sectors

There is a close relationship between the SRIG and the Welsh Stroke Alliance (WSA), a multidisciplinary

alliance of stroke professionals in Wales that serves as a reference group to the Welsh Assembly Government Stroke Services Improvement Programme Project. This relationship aims to ensure that there are strong links between stroke research and the developments in stroke policy and practice in Wales.

Wales is involved in a number of national stroke trials, for example, ENOS, Stroke-INF, LoTS-Care, AVERT, CADISS, CARS, SOS, CLOTS, IST3, and VITATOPS. More details on these studies can be found on the UK Stroke Research Network (UKSRN) web site www.uksrn.ac.uk. Practitioners and researchers in Wales are actively engaging with further national trials and these discussions will result in additions to the current portfolio. The portfolio is now supported by CRC Cymru Research Professional Network Clinical Studies Officers and Research Nurses who assist with patient and carer recruitment and follow up.

A number of Research Development Groups (RDGs) have been established by the SRIG to develop clinical research questions related to stroke care into funding submissions. These RDGs cover topics related to post-stroke shoulder pain, benchmarking to improve knowledge translation, screening for depression and anxiety post-stroke, measurement of patient activity in hospital rehabilitation environments and stroke patients' experiences of transitions from hospital to community based rehabilitation. Opportunities to form more RDGs are available as it is important that Wales increases home-grown research studies, and builds collaborative working relationships with the UKSRN Clinical Studies Groups (CSGs) in England.

The SRIG has been successful in three funding applications:

1. ARREST – Action Research to Reduce Repetition of Stroke, PhD studentship funded by Wales Office of Research & Development (WORD),
2. Stroke Research Portfolio Development Fellow post, jointly funded by The Stroke Association and WORD, and
3. A realistic synthesis of integrated health and social care funded by WORD.

In 2008, Dr Allison Cooper joined OPAN as Stroke Research Portfolio Development Fellow. Based at Swansea University and jointly funded by

the Stroke Association and WORD, this post is designed to build stroke research capacity in Wales. Allison works specifically with the SRIG to facilitate the development and submission of high quality collaborative clinical research proposals informed by the group's research priorities as well as linking with the UK Stroke Research Network to enhance Welsh involvement in multicentre stroke studies and continuing to develop her career as a stroke researcher. Until starting this post Allison was a clinical specialist physiotherapist in Gwent Healthcare NHS Trust where she specialised in neurological, stroke and vestibular rehabilitation for over 20 years. Allison completed her PhD at the School of Healthcare Studies, Cardiff University in 2006 supported by a WORD personal bursary. Her research aimed to further knowledge of the nature of neurological impairments following stroke, in particular, those related to the causes of muscle weakness, the relationship of spasticity and muscle contracture and muscle activation patterns during gait. Her research interests continue in the field of gait patterns and muscle weakness following stroke and also into the causes and prevention of post-stroke shoulder pain.

Allison would be interested in talking to anybody within Wales who has a research idea that they would like to develop or to anybody within or outside Wales who is interested in collaborating to develop stroke research. She can be contacted on Allison.cooper@swansea.ac.uk or telephone 07717 576108.

Programme manager for All Wales Stroke Services Improvement Collaborative

Michelle Price

I am currently the programme manager of the All Wales Stroke Services Improvement Collaborative (AWSSIC). It is a twelve month programme, led by National Leadership and Innovation Agency for Healthcare (NLIAH), focussed on improving the reliability of care delivered to stroke patients in the first seven days following stroke by introducing care bundles. I have been seconded to NLIAH for twelve months from my substantive post as Clinical Specialist Physiotherapist in the Neuro Inflammatory Team for South West Wales.

The collaborative is one work stream of the overarching Stroke Services Improvement Programme (SSIP), being delivered in partnership by the National Public Health Service (NPHS), Welsh Centre for Health (WCfH) and NLIAH.

The AWSSIC is based on the Institute of Healthcare Improvement Breakthrough Series Model. Fourteen multidisciplinary teams representing the 18 acute stroke services in Wales have been involved.

The collaborative was launched in November 2007 at the first learning session. Teams were introduced to four care bundles. These are:

- First Hours Bundle – rapid recognition of symptoms and diagnosis within three hours.
- First Day Bundle – Emergency treatment for people with stroke within 24 hours.
- First Three Days Bundle – Early mobilisation following stroke – within three days.
- First Seven Days Bundle – Patient centred and goal orientated specialist care following stroke – within seven days.

There are between three and five specific interventions in each bundle, which largely map to the standards of care set out in the RCP and NICE Guidelines. To achieve compliance with the bundle a patient must receive all of the interventions in the bundle in the appropriate timeframe.

Teams were also introduced to service improvement methodology and a data tool that had been developed to allow teams to monitor their performance against these bundles on a patient, weekly and monthly basis and inform and evaluate any service developments.

There have been three Wales wide events over the past nine months to enable teams to share what they have achieved and learn from each others experiences.

By July 2009 all acute stroke sites had started collecting prospective data on every stroke patient admitted hospital. Twelve teams are using AWSSIC data tool. Nine teams have almost complete datasets. Ten teams have completed at least one test of change. One team have tested and implemented over ten small changes which they have been able to show have improved the reliability of patient care.

My role as programme manager entails supporting all of the teams and facilitating the sharing of learning and service development through:

- monthly site visits,
- bimonthly meetings for those designated as project leads for each team,
- bimonthly telephone conferences,
- maintaining an intranet site to enable teams to share documentation, protocols and training

programmes that have been developed.

I have been overwhelmed by the enthusiasm and commitment of all the clinicians involved in acute stroke care in Wales. The collaborative has provided a focus for service improvement and provided a framework for clinicians to identify which aspects of the care they provide they need to address and evaluate the impact of the changes they make. It has helped improve communication within and between multidisciplinary teams, and has led to service improvements being made more quickly than if the teams were all working independently.

It has been fascinating to see how once a team start collecting prospective data and are able to see the shortcomings in the care they deliver, how resourceful they can be in developing and implementing improvements.

My broad clinical experience in neurosciences from acute neurosurgery to community rehabilitation and long term support in the UK and abroad has helped me understand the challenges faced by the project leads and teams and facilitate some of the solutions. I feel privileged to have been involved and have learnt so much about service improvement methodology that will be transferable into any future roles I may have.

Neuronet-working

An informal group comprising of academics and clinical staff was formed in October 2007.

The following objectives for the group were established:

- To generate themes and priorities for research,
- To develop collaborative teams,
- To share expertise,
- To disseminate information,
- To provide a mechanism for communication, such as email, video conferencing to facilitate collaboration.

Meetings are held monthly at Cardiff University. Academic staff and former MSc students have presented their research on topics, such as, core stability, FES, strength training, shoulder pain and clinical research priorities. It is hoped that a web page will be established in 2009 to facilitate further links with clinicians in other parts of Wales.

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.

COURSES

Are the arms and legs connected during locomotion?

26th May 2009

A course led by **Pam Loadman** Research Associate at the Rehabilitation Neuroscience Laboratory, University of Victoria, Canada and a Clinical Specialist for the Outpatient Neurological Rehabilitation programme

Review by **Charlie Dorer**
East Anglia ACPIN

On the 26th May, Pam Loadman gave a fascinating talk, based on her MSc that examined the potential neural mechanisms of control in neurologically intact individuals during rhythmic, automatic movement. It was discussed whether humans might maintain similar residual interlimb co-ordination seen in quadrupeds during locomotion and if there was any potential to access these mechanisms in a clinical setting.

Pam used the H-reflex to see if specificity existed in interlimb Soleus H-reflex modulation during arm cycling. It was found that rhythmic movement of the arms created a relatively non-specific signal of generalised activity that was transferred to

the leg muscles. The modulation of the H reflex was not phase dependent or related to the locus of movement, but higher frequencies and larger excursions of the arms produced a greater suppression of the reflex.

Mechanisms that control this interlimb reflex modulation are not fully understood but there is likely to be a CPG component, as it is task dependent and changes in rhythm lead to changes in its suppression. This could have important clinical relevance for physiotherapists facilitating locomotion in that:

1. Accessing automatic rhythmicity of locomotion is likely to be important.

2. The arms are connected neurologically to the legs when moving rhythmically.
3. The frequency and the size of the rhythmic arm are important to modulate leg neural circuitry.

This piece of research is likely to lead on to looking at what happens when the arms and legs are moving together and if similar results occur in people post stroke or SCI.

Welsh Stroke Conference 2009

The 8th Welsh Stroke conference was held at the Riverfront Centre in Newport South Wales on 19th June 2009

Review by **Adelle Griffiths**

The atmosphere of the conference was buoyant following a year of investment, training and collaborative working in Welsh Services which has seen new posts and a commitment to new ways of working with stakeholders from a wide variety of backgrounds committed to improving the journeys and outcome of the stroke population.

The morning session, *From Bench to Bedside* opened with Professor Steve Dunnett, director of the Brain Repair group at Cardiff University presenting functional cell transplantation and emerging stem cell and gene therapy technologies.

Dr Michel of Lausanne University Hospital presented the Swiss model of state of the art management of acute strokes. He showed how the high level of service organisation allows for admission to thrombolysis time to be

thirty minutes and how the use of helicopters has increased thrombolysis rates by 15%. Dr Michel advocated the use of telemedicine technology to enable a medic to assess patients in transit and spoke about the benefits of using endovascular treatments both in isolation and in combination with thrombolysis. Dr Michel spoke in praise of the recent improvements in Welsh Services and emphasised that there are greater benefits to the stroke population from having high quality basic stroke care than from thrombolysis.

Dr Mark Bayley, Medical Director of the neurorehabilitation programme at the Toronto Rehabilitation Institute spoke about the challenge of implementing research into practise and his aim of providing a map for translating knowledge into practise. Dr Bayley is currently a principle investigator on the Canadian Stroke Network SCORE trial (Stroke Canada Optimisation of Rehabilitation by Evidence) and the Getting on with life after Stroke trial. He spoke about simple and achievable ways of getting rehabilitation messages across such as the use of publicity, reminders, pocket cards and bags for patient equipment.

The second session *Achieving excellence in service delivery* opened with a moving account from Mr George Smedley of his journey through Welsh Stroke Services, a sobering story which cannot have failed to touch every delegate at the conference and spur them to work to deliver a world class service in Wales.

Dr Damian Jenkins then took the floor, describing the challenges of redesigning stroke services and the importance of clinical networks, Dr Jonathan Mant spoke about the role of primary care in developing stroke services and the importance of long term support.

The annual Bhomick Bursary Presentation was an entertaining showcase of an e-referral system that has been introduced in Cardiff. The Bhomick Lecture was delivered by Professor Marie Germaine Bousser whose inspiring story telling left us with the message that we can learn something from every patient.

Following an excellent lunch and an opportunity to view the thirty poster presentations, the conference divided for the afternoon sessions. The medical programme focussed upon the management of hypertension. The rehabilitation programme

opened with Professor Steven Wolf, presenting the implications of the EXCITE trial. Dr Jeremy Tree, discussed the links between aphasia research and practise, Professor Anthony Ward gave a clear update of the current evidence for the use of Botulinum Toxin in Stroke Rehabilitation.

The conference was brought to a close with Dr Paulette van Vliet presenting evidence for the use of extrinsic feedback for motor learning after stroke. She showed that the aim of using feedback was to increase the level of skill achieved, speed up learning, to sustain motivation and improve skill mastery. Dr van Vliet emphasised the importance of giving specific verbal feedback on performance and consideration of internally focussed instructions versus externally focussed instructions. The take home messages were to 'focus on the focus' and that it 'is better to be scientific rather than subliminal about our feedback'.

The conference was sold out and delivered a varied and interesting programme, we can now look forward to next years' conference when we should be able to see the impact of the collaborative working groups upon Welsh Stroke services.

COURSES (CONTINUED)

Classic Pilates Clinical Application for Neurological patients

Sussex ACPIN study day,
20th June 2009

A course led by **Jo Gilmore**, classical pilates instructor in advanced mat work and senior neurophysiotherapist

Reviewed by **Gemma Alder** Senior Neurophysiotherapist, Lilac Stroke Rehabilitation Unit Southlands Hospital Western Sussex and Sussex ACPIN regional representative

Jo Gilmore has been qualified as a Classical Pilates Tutor for the past five years and has a particular interest in how the Classical Pilates Concept can be transferred to clients with a neurological dysfunction.

Pilates is a complete exercise method developed by Joseph Pilates over the course of a lifetime dedicated to improving physical and mental health. Pilates focuses on building your body's core strength and improving your posture through a series of low impact stretching and conditioning exercises.

The objective of the study day was to challenge the participants understanding of core stability, to take away the important concepts in the training of core stability and how these concepts can be transferred into clinical practice.

The format of this study day included a suitable balance of both theoretical and practical components. The practical component gave participants the opportunity to experience Classical Pilates themselves which resulted in a more informed idea of how to facilitate this approach with clients with neurological dysfunction. The study day was well received with positive feedback from all participants.

Jo says that 'Pilates from a physiotherapeutic perspective could be described as a system which trains movement in multiple synergistic patterns that can assist in developing control and coordination, improve alignment, address stability with mobility and can result in effort with ease'.

The morning lecture concentrated on the 'Theory behind the Joseph Pilates Concept' followed by a practical session where participants analysed core stability, alignment and practised the facilitation of core muscles.

Throughout the morning participants were encouraged to review the factors that cause problems with stability in neurological dysfunction such as disturbances of feedback/feedforward mechanisms, postural control mechanisms, tonal changes, posture and local changes to muscles in order to begin to formulate some ideas that could be brought into clinical practice.

The afternoon consisted again of both theory and practical lectures which focused on clinical application. Jo outlined how Pilates can be used as an adjunct to treatment or as an integral component of rehabilitation. This was complemented well with previous case studies that demonstrated how Pilates can assist in managing long term pain and dysfunction.

Appropriate clientele were discussed and what adaptations would be required to implement this approach affectively into the clinical setting. Jo continued to facilitate discussion about the use of various postural sets used in core stability training and how and when to consider progression. The day closed with practical mat class for the group.

This course was beneficial for physiotherapists working in a variety of neuro fields with clients that have various functional abilities. The tutor and the structure of the programme enabled an interactive day which was particularly well facilitated providing plenty of food for thought.

As neurophysiotherapists we are concerned with developing treatment plans which challenge our clients postural control and increase their body awareness in order to enhance their functional independence. This course provided me with a new treatment intervention that I look forward to implementing in my everyday clinical practice.

Outcome measures

Surrey and Borders ACPIN study day,
29th February 2009, Postgraduate
Medical Centre at the Royal Surrey
County Hospital, Guildford

Review by **Emma Jones**, ACPIN
committee member

The Outcome Measure Study was organised by Surrey and Borders ACPIN Committee and was attended by members from here and neighbouring ACPIN regions.

The day comprised of three specialist guest speakers within the field of outcome measures. Dr Sara Tyson, Senior Research Fellow from the University of Salford, Dr Sara Demain from the University of Southampton and Dr Paula Kersten, Senior Lecturer at the University of Southampton. The format of the day involved lectures and study workshops to demonstrate both the theoretical and practical application of using physiotherapy related outcome measures.

The study day commenced with a lecture by Dr Sara Tyson on *Using Robust outcome measures in neurological physiotherapy*. This was an introductory lecture into the topic of outcome measures, in particular why outcome measures are important clinically, the different type of measures to use and how we make the decision of what we use and why. She also effectively dispelled the misconception that one measure is suitable for all and how we need a 'basket of measuring tools' to cover all aspects of the physiotherapy assessment and treatment process.

Dr Sara Demain presented a lecture on *Not everything that counts can be measured*. This explored the qualitative aspects of using measurement tools. In particular discussing the importance of how you may not be able to measure everything that is considered important within your assessment. It was identified that these factors still need to be considered as part of your management plan as these may have influences on the outcome of your intervention. This was discussed with reference to her recent research project.

The half day was concluded by a lecture from Dr Paula Kersten on *Choosing a valid measure* and followed with practical workshops. This discussed considering the psychometric properties of outcome measures and in particular the influences of validity and reliability on ensuring appropriate and clinically sound conclusions are drawn. This was related clinically to three commonly used measures, The Barthel Index, the Functional Reach Test and Timed 10 metre walk. This prompted discussion within groups particularly through the variations between how outcome measures were undertaken and interpreted. The importance of understanding and correctly performing various measures was stressed.

Feedback from the day identified the course was good value for money and a success being run as a half day. Respondents also felt the information disseminated was clinically relevant, thought provoking and had a good balance between theoretical and interactive practical sessions.

REGIONAL REPORTS

East Anglia

Nic Hills

2009 thus far has continued to be successful for East Anglia ACPIN. The committee now has a good representation from across the region, thanks to Anna Farr, Charlie Dorer and a pool of members from Addenbrookes joining the team. Our membership numbers have remained high and this has seen our courses well attended and often over subscribed.

Our programme so far has been:

- February – *Neuro-pilates study day*.
- May – *Cognition and Memory study afternoon* combined with the AGM.
- May – Evening lecture *Do legs and arms work together in locomotion?*
- September – *Neuro-pilates study day* (re-ran due to popular demand).

Provisional programme for 2010

- March – *Balance course* with Helen Lindfield, Bobath Tutor at Ipswich Hospital.
- May – AGM with lectures from local experts (title to be confirmed).

We would like to run another neuro-pilates study day, if anyone is interested in running or attending the course please get in touch with me.

As ever, we like to hear what you as members would like to see in the East Anglia ACPIN programme, so if you have any suggestions please contact me. I look forward to seeing you at our courses in 2010!

Kent

Janice Champion

We have had another good year with membership numbers staying high for Kent and therefore our committee has been strongly supported led by Cathy Kelly-Jones, our chairperson.

Following our successful AGM lecture on neurolinguistic programming, we planned a follow-up workshop for June but unfortunately we did not receive enough applicants to make

this viable so we plan to re-schedule the event for January 2010.

Our next study day will be *The Brain Gym* which will be held on Saturday 14th November at the Kent and Canterbury Hospital and lunch will be sponsored by Allergan.

The forthcoming programme will hopefully include a study day on pilates in neurology linked with the AGM in March 2010.

Any ideas from members for future courses are always welcome.

London

Andrea Stennett

This is my first report as Regional Rep for London ACPIN, having succeeded Leigh Forsyth in January 2009.

The Committee would like to take this opportunity to say thanks to both Leigh Forsyth and Dr Gita Ramdharry for their invaluable contribution to London ACPIN, and wish them all the best in their future endeavours. We also would like to welcome the new committee members and Trudy-Ann Sinclair in her new role as secretary.

So far this year we have had some exciting lectures. Dr Fiona Jones kick started the year in January with updates on *Self-efficacy* followed by our AGM. May and June were quite busy with Dr Emma Stack presenting on *The Early Management of Parkinson's Disease*. Remember you can get a free copy of the *Professional's Guide to Parkinson's Disease* from the Parkinson Disease Society. In June we teamed up with the National Physiotherapy Research Network (NPRN) to host another successful event on the *Management of Spasticity*. We received presentations from Steve Ashford, Dr Amiee Pinto and Professor John Marsden.

In September there was an evening lecture on *Cognitive Behavioural Therapy* with Dr Di Thompson followed by our annual wine and cheese reception!

The final event of the year will be held in November, which will show-

case new research being done by physiotherapists in our region.

Application forms for all courses may be found in the London Region part of the main ACPIN website.

We have been working very hard on the 2010 lecture programmes and just to give you a sneak preview; we will be hosting a study day in September 2010 with Anne Shumway-Cook! So keep checking *Frontline*, iCSP or the ACPIN website (www.acpin.net) for updates.

Thank you for your continued support to both our evening lectures and study mornings. Our lectures have been very successful which keeps our bank balance quite healthy. As such, we have made an effort to keep the lectures at an affordable rate despite this period of economic downturn. Additionally, we have launched a new initiative: 'The London ACPIN International Lecture Fund'. This was set up to provide funding exclusively for London ACPIN members who wish to present at international conferences. For more information please see www.acpin.net under the London Region link.

As usual, if you wish to contact us directly or if you have any ideas about future courses that you would like us to organise please email us at londonacpin@googlemail.com

We look forward to working with you over the upcoming months.

North Trent

Anna Wilkinson

The new North Trent ACPIN committee have met several times and since the success of our evening lecture in February we now hope to get the recently dormant North Trent back to life a little again! I would like to thank the previous committee for all their hard work over several years and also to Emma Procter for stepping in temporarily as chair-person until we find another willing volunteer!

We are finishing the year with two lectures – one on October 27th with Dr Tungland (Audiovestibular

Physician) speaking on *a simple model of balance* in relation to vestibular rehabilitation. We are hoping this will lead us into a 2008 lecture on vestibular rehabilitation treatment. On 9th December we welcome Liz Mackay back to lecture at Sheffield Hallam University on *Pushing Syndrome* – where to go when nothing seems possible. Hopefully, these two lectures will help end this year on a good note.

We are busy planning next year's programme. If anyone has any ideas or events that they would like to see run please let us know – contact details are on the website.

Northern Ireland

Joanne Wrigglesworth

NI ACPIN continues as a successful and thriving Clinical Interest Group branch. We have launched our 2009/10 programme with our Neurological Assessment workshop, which has become a fixture and fitting, kick starting everyone's learning for the year! NI ACPIN continues to provide a monthly evening workshop, with variable topics, both practical and theoretical.

The programme this year will be covering treadmill training, seating and pressure mapping for patients with neurological deficit, falls and balance re-education and neuropathic pain. Practical workshops on airway clearance with cough assist equipment and a gym ball class are just some of the spring highlights.

The NI ACPIN committee have been considering organising a one or two day course in 2010. Any topic suggestions would be received and considered with thanks.

As always, the committee would like to thank you all for the on going support and attendance at the ACPIN events and we look forward to seeing you all over the coming months.

Northern

Catherine Birkett

Here in the Northern Region we have had a few changes in our committee. We owe a huge debt of gratitude to Pam Thirlwell, Alex Haugh and Vicki Gilman who have recently stepped down after years of dedicated service and we wish them well. Naturally, this means we would welcome new committee members to come and join us. No experience necessary – just an interest in neurology and enthusiasm!

So far we are enjoying the year and following feedback from our members have tried to vary our programme to include a mix of weekend courses, evening lectures with discussion and weekday afternoon updates. So far this has been well received. Our most recent events have included an evening lecture by Dr Eldabe on *intrathecal baclofen* at James Cook University Hospital. A *Spasticity Update afternoon* given by Dr Macfarlane and Sandra Stark at Walkergate Park for Neurorehabilitation, and a *weekend course on Musculoskeletal techniques in Neurology* provided by Laura Finucane and Helen Lindfield and hosted by Chester-le-Street Community Hospital. Thank you to all event organisers and venues, and to our members for making these events such a success.

Our programme for later this year is set to include *AAP Mat Level One Pilates for physiotherapists* on September 18th and 19th, and an evening of *Outcome Measure Exchange* in November. So far for 2010 we are looking forward to a programme which includes *Postural Control* with Linzi Meadows in March, *Vestibular Rehabilitation* and three *Introductory Bobath Weekends*. We welcome all feedback and suggestions from our membership and we are keen to know what events you would like us to provide. All events are advertised by newsletter and flyer to our membership and in *Frontline*, or you can find details on the Northern Region page at www.acpin.net

Oxford

Sophie Gwilym

At the time of writing (in a gorgeous late blast of sunshine) the Autumn/Winter programme is still being finalised. Over the past few months we have enjoyed an interesting update from Professor Kischka on *spasticity* and Professor Wade is due to speak to us about *neurological outcome measures*. We are grateful to the therapists at Stoke Mandeville Hospital who ran another of their popular SCI workshops earlier in the summer.

A big thank you to our members who continue to support our evening lectures in good numbers, we are looking forward to seeing you again after our summer break.

We would welcome new committee members, ideas or suggestions for future events. Please contact any member of the committee directly or use the email address oxfordacpin@gmail.com

Scotland

Dorothy Bowman

We would like to thank Julie McDonald who has retired as treasurer and Lynn Haughy who has retired as membership secretary for their contributions to the committee and ACPIN Scotland. Welcome to new members of the committee.

We have had several successful courses this year which have been well attended with good feedback. We always welcome new ideas and suggestion. We try and ensure a geographical spread of courses but obviously covering such a huge area this is difficult. If you would like to host a course or are feeling left out let us know!

Programme 2009/2010

- November 21st 2009 *Lower Limb rehabilitation in patients with a neurological deficit* Helen Lindfield (Bobath Tutor Raigmore Hospital Inverness).
- January/February 2010 *Rescheduled course. Orthotic management of the Lower Limb* Ray Bowers Glasgow tbc

- June 23rd–25th 2010 *Muscle Imbalance in the Neurological Patient* Sarah Mottram (Kinetic Control), Woodend Hospital, Aberdeen.

Thank you to all members for their continued support of ACPIN.

South Trent

Becky Sammut

Welcome to our new members and a big hello to our existing members. Over the past 18 months we have dwindled in regular attenders to the South Trent committee meetings. However, we have recently recruited several new faces and have representatives from both the Derby and Nottingham trusts now and we look forward to providing a more action packed programme during the remaining 2009 and into 2010. We would really like to welcome new faces to the committee, particularly from other counties such as Leicestershire and Lincolnshire so please drop me a line or email if you would like any further details. We rotate the location of meetings to help out with travelling.

We must say a huge thank you to our retiring minutes secretary Kate Pattinson for all her hard work and support.

We have run two evening lectures over the summer months, *Intrathecal Baclofen* and the *Role of the Physiotherapist and Caloric Stimulation*. Both evenings were well attended and provided a great forum for discussion. We are very grateful to our speakers Natalie Gray and Ruth Sturt.

Please do not hesitate to contact me if you require any further information on upcoming events, becoming part of the committee team or if you have an idea for a lecture, course or speaker that you would like us to organise.

Remaining programme for 2009

- 14th/15th November 2009 *Ataxia* Lynne Fletcher, Nottingham University Hospital, City Campus.

Forthcoming Programme for 2010

- 20th/21st February 2010 *The Upper Limb with a focus on the Scapula* Clare Fraser, venue to be confirmed.

South West

Katy Moss

South West ACPIN has continued to remain an active group over the summer season. We have held a successful study day on stroke guidelines combined with an AGM which attracted some new committee members. We have also held study days and evening lectures on neuroanatomy and an evening talk on the use of dynamic orthoses in the management of ataxia incorporating a summer social. Further courses planned include motivational interviewing and a balance after traumatic brain injury study day. Courses will be advertised via the ACPIN website www.acpin.net

Changes to committee members including a change of chair and regional representative are planned for the autumn/winter season.

If anyone wishes to be involved with the ACPIN committee or has ideas/suggestions for courses please contact katy.moss@glos.nhs.uk

Surrey and Borders

Kate Moffatt

Our membership remains healthy and I hope you have enjoyed this year's programme so far. More regional members and committee members are always welcome!

As you may be aware, due to members' feedback at last years AGM, we reduced the number of evening lectures and trialed two half-day study days; *Outcome Measures* and *FOTT*. We have also had a recent evening lecture on *Acupuncture in Neurology* given by Val Hopwood, proving very popular.

Surrey and Borders ACPIN now hope to provide at least five events per year, varying the venues between RSCH, Farnham, Frimley Park Hospital and Woking Community Hospital.

Forthcoming programme

- November 2009 *Pain of neurological Origin* Dr Markham (TBC).
- February 2010 *MS research project feedback and the AGM*.
- April 2010 Further update by Sara Demailre: *Discharge from physio-*

therapy stroke services (TBC).

- June 2010 – *Specialist Seating in the Developing World* David Constantine (TBC).
- September 2010 *Gym Ball Study Day* (TBC).
- November 2010 *Mental Rehearsal* (TBC).

If you have further suggestions of future lectures or courses please do not hesitate to contact me. Please check *Frontline* and iCSP for updates on our future programme.

Sussex

Gemma Alder

There has been a few changes made to the committee this year. We said goodbye to Margret Hewett and Clare Hall as they stepped down as chair person and regional rep. On behalf of Sussex ACPIN we would like to thank them for all their hard work and contributions to the regional committee. We were delighted that one of our proactive committee members Nora Bessant agreed to be our new chair. I have had an exciting time as 2009 was my first year as regional rep.

By the time you receive your autumn *Synapse* we will have completed our course programme for 2009. We have had an inspiring year with a variety of study days and evening lectures.

In February we held our AGM and Multiple Sclerosis Study Day on *Postural and gait re-education*. This included presentations from a MS specialist nurse, two clinical specialist physiotherapists in neurology, and two patient perspectives. This was a fantastic day which was extremely useful for furthering the audience's knowledge of MS.

In May we had an evening lecture on *Understanding Impaired patient Cognition within Neurological Physiotherapy Treatment* with Mark Hawkes a senior occupational therapist in the community stroke setting. We had an excellent turn out – one of our most successfully evening lectures so far. It certainly provided us with a structure to work with within physiotherapy assessment and treatment. It also prompted some inter-

esting discussion regarding multidisciplinary working and cognition.

In June we were thrilled that Jo Gilmore MCSP, Classical Pilates Instructor returned for a sequel after interest from the course she ran in 2008. Again this was a very successful day with very positive feedback from participants and yet again Jo provided us with some fresh treatment ideas to use with our clients with neurological dysfunction. To read more about *The Pilates Study Day – Clinical Application for the Neurological Patients* refer to this issue of *Synapse* under Course Reviews.

In September we held another evening lecture with Martin D van den Broek who suggests that motivational interviewing may help the patient to recognise the importance of making psychological adjustments and practical adaptations. Subsequently the patient may be able to develop confidence in their ability to adjust and adapt to realistic goals for their recovery. This was a very interesting and useful lecture.

Finally in October we were delighted that Geraldine Mann Specialist Physiotherapist in FES from Salisbury Hospital agreed to come and talk to us. The Study Day concentrated on the *Upper Limb* and the course was designed to give attendees a feel (literally) of what FES is like. The theory behind stimulation, and the evidence for and adjuncts to upper limb FES was covered, plus half a day of practical. A course thoroughly enjoyed by all.

The Sussex Committee are grateful to all of the programme speakers for educating and enlightening us over the last year.

We have a selection of other study days in the pipeline for 2010. More information and confirmation of these courses will be available on the website in the near future.

As always your thoughts and ideas are important to us. They really aid us in shaping the course format for the following year. Please feel free to contact myself or any of the committee members to share your ideas.

fit for life? exercise & neurology

**ACPIN National Conference
and AGM 2010
Northampton Hilton
Friday 19th and Saturday 20th March**

Call for posters

Do you have a piece of work relating to exercise with neurological clients that you would like to share with your colleagues?

A pilot study or audit perhaps? Are you planning to set up such a group and would welcome peer review to help with outcome measures or benchmarking? Are you a post-graduate student or recently graduated physiotherapist who would like to share the results of your dissertation?

Then this is the forum for you.

Posters will be displayed during the conference and a £50 prize awarded to the best as judged by a selected panel.

It really is not as daunting as you think and may help you achieve your KSF requirements! Advice and support can be offered in the development of your idea although ACPIN cannot print the posters themselves.

Please contact **Julia Williamson**
(Hon research officer) via
Julia.Williamson@nuth.nhs.uk
for additional information.

Deadline for expressions of interest: 11 January 2010

Wessex

Hayden Kirk

2009 has been a very active year for Wessex ACPIN. The new committee has settled in well and our membership rose to a healthy 72. This year the committee tried a programme of fewer but more targeted evening lectures which seemed to have a good response in terms of attendance and feedback. Topics included *MND management and research, family and carer interactions, return to driving, hemiplegic shoulder pathways, head injury management and upper limb FES*. For courses we ran a splinting weekend and this year we hosted our first one-day conference on *spasticity management*. This proved a very popular day and was well supported by all the professions with 150 delegates coming from across the country (and Ireland).

In order to maintain the momentum from 2009 we have made an early start with the programme and would encourage members to look at the Wessex region page of the ACPIN website as all courses, bursary details and application forms will now be posted and regularly updated on this site.

Finally, the usual committee plea! As a committee we try to understand the membership needs and provide a strong and inclusive programme. It can however be hard to reach all corners of the region so please continue to put forward any suggestions or ideas that you have, either by email or through a local committee member. If you are brimming with enthusiasm then why not join the committee, new members are always welcome, age and experience are no barrier.

West Midlands

Katherine Harrison

2009 has been a very successful year so far for west midlands ACPIN. Committee membership remains strong as does the number of members throughout the region.

Our first course of the year was the very successful *Parkinson's Disease study day* run at Birmingham University. The course involved informative lectures on many different aspects in Parkinson's including recent research projects and was very well received by a full house of attendees!

Mary Lynch, Bobath tutor, ran a practical based course over one weekend which was again fully subscribed and very interesting.

More recently an evening lecture was done by the GBS society (free to ACPIN members). As the lecture was done by someone who had suffered from GBS it gave a new perspective on the condition and proved a success with a very full lecture theatre.

The next course on the agenda is the much anticipated *weekend PNF course* by Nikki Rochford. This course had to be cancelled last year so it has filled up quickly. Due to its popularity we may try to run another course next year!

On the 7th and 8th of November we are running a practical based course on *cerebral palsy*. The course will be done by Bobath tutor Chris Barber and will focus on the transition period from child to adult. Due to the courses practical content places will be limited so look out for advertising via email or on the ACPIN website.

Finally for 2009 we are planning an evening lecture on *MND* by Professor Morrisson at Birmingham University. This will take place in the first week of December, more details to follow soon.

If you have any questions about any of the courses or ACPIN in the west midlands please us on katherine.harrison@heartofengland.nhs.uk

I would like to thank the west midlands committee members for their all their hard work and the west midlands members for their continued support.

Yorkshire

Jill Fisher

Our committee have been very active this year producing a busy and exciting programme including a large number of day courses. Thanks go to Heather Dunbar at this time of her resignation, for all she has contributed to Yorkshire ACPIN over the last three years, the last two as Chair.

We have had a very good response from Yorkshire members who volunteered to be part of the national mapping project, thank you.

In April our AGM day included talks about *Lycra Splinting* and *Sleep Systems*. In May, Patrick Doherty gave a very interesting talk, although unfortunately under attended, relating to carrying out physiotherapy research. Emma Greenfield, in June, gave a well received talk on the management of spasticity. In July, Dr Salawa talked on cognition and physical activity. In September Amanda Stroud, clinical psychologist, will talk on strategies for physiotherapists in addressing cognitive problems. In October Caroline Brown gave us a botulinum toxin update.

Forthcoming Programme

In early November a two day hydrotherapy course will be held at Pinderfields Hospital, and on the 21st of November there will be a day – 'Introduction to Postural Management' supported by the MS society. On the 20th of March 2010 Janice Champion will be leading a 'Gym Ball' day, and on the 5th of June 2010 Lyn Fletcher will be leading a Ataxia course to respond to the much enjoyed and oversubscribed course held in March 2009.

WRITING FOR SYNAPSE

Synapse is the official peer-reviewed journal of the Association of Chartered Physiotherapists in Neurology (ACPIN). *Synapse* aims to provide a forum for publications that are interesting, informative and encourage debate in neurological physiotherapy and associated areas.

Synapse is pleased to accept submitted manuscripts from all grades and experience of staff including students. We particularly wish to encourage 'novice' writers considering publication for the first time and ACPIN provides support and guidance as required. All submissions will be acknowledged within two working weeks of receipt.

Examples of articles for submission:

Case Reports

Synapse is pleased to accept case reports that provide information on interesting or unusual patients which may encourage other practitioners to reflect on their own practice and clinical reasoning. It is recognised that case studies are usually written up retrospectively. The maximum length is 3,000 words and the following structure is suggested:

Title – this should be concise and reflect the key content of the case report.

Introduction – this sets the scene giving background to the topic, and why you consider this case to be important, for example what is new or different about it? A brief overview of the literature or the incorporation of a few references is useful so people can situate the case study against what already is known.

The patient – give a concise description of the patient and condition that shows the key physiotherapeutic, biomedical and psychosocial features. Give the patient a name, but not their own name. Photographs of the patient will need to be accompanied by explicit permission for them to be used. Only relevant information to the patients' problem should be included.

Intervention/method – Describe what you did, how the patient progressed and the outcome. Aims, treatment, outcomes, clinical reasoning and the patient's level of satisfaction should be addressed. Indications of time scales need to be considered.

Implications for practice – Discuss the knowledge gained, linking back to the aims/purpose, and to published research findings. Consider insights for treatment of similar patients, and potential for application to other conditions.

Summary – List the main lessons to be drawn from this example. Limitations should be clearly stated, and suggestions made for clinical practice.

References – the Harvard style of referencing should be followed (please see *Preparation of editorial material* below).

Original research papers

These should not exceed 4,000 words and papers should include the following headings:

Abstract – (maximum of 300 words)

Introduction

Method – to include design, participants, materials and procedure

Results

Discussion

Conclusion – including implications for practice

References

Abstracts of thesis and dissertations

Abstracts from research (undergraduate and postgraduate) projects, presentations or posters will be welcomed. They should be up to 500 words, and broadly follow the conventional format: introduction, purpose, method, result, discussion, conclusion.

Audit report

A report which contains examination of the method, results, analysis, conclusions of audit relating to neurology and physiotherapy, using any method or design. This could include a Service Development Quality Assurance report of changes in service delivery aimed at improving quality. These should be up to 2,000 words.

Sharing good practice

This *Synapse* feature aims to spread the word amongst ACPIN members about innovative practice or service developments. The original format for this piece started as a question and answer session, covering the salient points of the topic, along with a contact name of the author for readers to pursue if they wish.

Questions were loosely framed around the following aspects (this would be for an audit)

- What was the driving force to initiate it?
- How did you go about it?
- What measurements did you use?
- What resources did you need?
- What did you learn about the process?
- How has it changed your service?

However recent editions have moved away from this format, and provide a fuller picture of their topic eg *Introducing a management pack for stroke patients in nursing homes* (Dearlove H Autumn 2007), *An in-service development education programme working across three different hospitals* (Fisher J Spring 2006), *A therapy led bed service at a community hospital* (Ramaswamy B Autumn 2008) and *Establishing an early supported discharge team for stroke* (Dunkerley A Spring 2008).

Product news

A short appraisal of up to 500 words, used to bring new or redesigned equipment to the notice of readers. This may include a description of a mechanical or technical device used in assessment, treatment

management or education to include specifications and summary evaluation. Please note, ACPIN and *Synapse* take no responsibility for these products, it is not an endorsement of the product.

Reviews

Course, book or journal reviews relevant to neurophysiotherapy are always welcome. Word count should be around 500. This section should reflect the wealth of events and lectures held by the ACPIN Regions every year.

OTHER REGULAR FEATURES

Focus on...

This is a *flexible space* in *Synapse* that features a range of topics and serves to offer different perspectives on subjects. Examples have been a stroke survivor's own account, an insight into physiotherapy behind the Paralympics and the topics of research, evidence and clinical measurement.

Five minutes with...

This is the newest feature for *Synapse*, where an ACPIN member takes 'five minutes' to interview well-known professionals about their views and influences on topics of interest to neurophysiotherapists. We are always keen to receive suggestions of individuals who would be suitable to feature.

PREPARATION OF EDITORIAL MATERIAL

Copies 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.

The first page should include:

- The title of the article
- The name of the author(s)
- A complete name and address for correspondence
- Professional and academic qualifications for all authors and their current positions

For original research papers, a brief note about each author that indicates their contribution and a summary of any funds supporting their work.

All articles should be well organised and written in simple, clear, correct English.

The positions of tables and charts or photographs should be appropriately titled and numbered consecutively in the text.

All photographs or line drawings should be at least 1,400 x 2,000 pixels at 72dpi.

All abbreviations must be explained.

References should be listed alphabetically, in the Harvard style. (see www.shef.ac.uk/library/libdocs/hsl-dvcl.pdf) eg:

Pearson MJT *et al* (2009) *Validity and inter-rater reliability of the Lindop Parkinson's Disease Mobility Assessment: a preliminary study* *Physiotherapy* 95 pp126–133.

If the article mentions an **outcome measure**, appropriate information about it should be included, describing measuring properties and where it may be obtained.

Permissions and ethical certification; 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.

SUBMISSION OF ARTICLES

An electronic and hard copy of each article should be sent with a covering letter from the principal author stating the type of article being submitted, releasing copy-right, confirming that appropriate permissions have been obtained, or stating what reprinting permissions are needed. For further information please contact the *Synapse* coordinator: louisedunthorne@tiscali.co.uk

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 JULY 2009

EAST ANGLIA

Nic Hills

Physiotherapy Department
Ipswich Hospital NHS Trust
Heath Road
Ipswich IP4 5PD
t 01473 702072
e Nicola.hills@
ipswichhospital.nhs.uk

KENT

Janice Champion

Medway Maritime Hospital
Windmill Road
Gillingham
Kent ME7 5NY
t 01634 833959
e ajchampion1@hotmail.com

LONDON

Andrea Stennet

e andstennet@yahoo.com

MANCHESTER

Helen Dawson

e Hedawson@talk21.com

MERSEYSIDE

Jo Jones

t 0151 282 6000 ext 6117
e joanne.jones@rlbuht.nhs.uk

NORTHERN

Catherine Birkett

e catherine.birkett@ntw.nhs.uk
e northernacpin@hotmail.com

NORTHERN IRELAND

Joanne Wrigglesworth

Physiotherapy Department
Belfast City Hospital
Lisburn Road
Belfast BT9 7AB
t 028 90329241 ext 2545
e joanne.wrigglesworth@
belfasttrust.hscni.net

NORTH TRENT

Anna Wilkinson

e a.j.wilkinson@shu.ac.uk

OXFORD

Sophie Gwilym

Witney Community Hospital
Welch Way
Witney OX28 6JJ
e sophie.gwilym@gmail.com

SCOTLAND

Dorothy Bowman

e dorothybowman@nhs.net

SOUTH TRENT

Becky Sammut

Physiotherapy Department
Derby City General Hospital
Uttoxeter Road
Derby DE22 3NE
t 01332 786565
e becky.sammut@nhs.net

SOUTH WEST

Kate Moss

Physiotherapy Department
Girencester Hospital
Gloucester GL7 1UY
t 01285 884536
e katy.moss@glos.nhs.uk

SURREY & BORDERS

Kate Moffatt

e ksmoff@hotmail.com

SUSSEX

Gemma Alder

e gemma.alder@wash.nhs.uk

WESSEX

Hayden Kirk

t 02380 811324
e hjsk1k06@soton.ac.uk

WEST MIDLANDS

Katherine Harrison

Physiotherapy Department
Solihull Medical Day Hospital
Lode Lane
B91 2PL
t 0121 424 4660
e katherine.harrison@
heartofengland.nhs.uk
e kathbuffyharrison@hotmail.com

YORKSHIRE

Jill Fisher

Neurophysiotherapy
4 St Helen's Lane
Adel
Leeds LS16 8AB
t 0113 2676365
e neurophysiotherapy@
yahoo.co.uk

Syn'apse

Editor

Louise Dunthorne

Editorial Advisory Committee

Members of ACPIN executive and national committees as required.

Design

kwgraphicdesign
t 44 (0) 1395 263677
e kw@kwgraphicdesign.co.uk

Printers

Henry Ling Limited
The Dorset Press
Dorchester

Address for correspondence

Louise Dunthorne
Synapse Editor
Manor Farm Barn, Manor Road,
Clopton, Woodbridge
Suffolk IP13 6SH
e lousedunthorne@tiscali.co.uk
t 44 (0)1473 738421

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

AUTUMN/WINTER 2009

ISSN 1369-958X



www.acpin.net