Spring 2007 Sym apse

"I own my MS, my MS doesn't own me" – a community self-management programme for patients with MS

Do efficient ground reaction forces in the feet influence postural control for the activity of sit to stand?





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### ACPIN'S AIMS

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

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CIG LIAISON REPRESENTATIVE Louise Gilbert Louise.gilbert@uhl.nhs.uk

SYNAPSE ADMINISTRATOR Louise Dunthorne Louise@peterdunthorne.co.uk

DIVERSITY OFFICER Ros Cox ros@simrosco.wanadoo.co.uk

COMMITTEE MEMBER Sandy Chambers

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COMMITTEE MEMBER Cherry Kilbride Cherry.kilbride@brunel.ac.uk

**COMMITTEE MEMBER** Jackie Sharp jackiesharp@btopenworld.com

### From the Chair

Nicola Hancock BSc (Hons) MCSP SRP ACPIN Chairperson

Welcome to the Spring 2007 edition of *Synapse*.

I have just returned from our AGM and Conference 2007, 'Challenging Balance', this year held at the very pleasant Sheffield Hilton, which I attended alongside the Executive and National Committees and over one hundred dedicated members. As usual, the fervour of the ACPIN membership was demonstrated by the relinquishing of a precious Saturday and the investment of £90.00 in expanding their knowledge and networking with colleagues from all over the country. We trust that all of you in attendance had a great day, and for those of you unable to make it, further details of the programme and the AGM can be found on page 24. Abstracts will also be on the website.

The AGM and this issue of Synapse provide us with the opportunity to make some farewells and welcome new members onto the Committee. These are summarised in full in the Chair's address to the AGM, on page 25 but I could not let this introduction pass without mentioning a few significant changes. Firstly, the departure from the Executive of Mary Cramp, our Honorary Research Officer. Mary has made an extraordinary contribution to the committee over the past six years and will be much missed, but we are delighted that Julia Williamson will be taking on this post. Julia is also looking forward to working with Ralph Hammond at the CSP on the Supporting Knowledge in Physiotherapy Practice (SKIPP) project, which we hope will begin with a review of the ACPIN splinting guidance document, currently out of print. Cherry Kilbride, another incredible supporter and contributor to the organisation, is handing over the Honorary Secretary post to Anne Rodger, but hopes to remain with us

for a final year as a committee member, consulting particularly on stroke and education.

Our Membership Database Coordinator, Diana Mees, resigned in the Autumn, and we honour her massive contribution. This resulted in a thorough review of the system and Jo Tuckey and Mary Cramp have done an inspired job of filtering all the application forms and setting up the new database. Membership stands at around 1,000, excellent for this time of year. Don't forget to download forms for colleagues from www.acpin.net. In fact, even if you are not looking for a membership form, do have a browse at the now much more dynamic and easy to use website, which has been considerably updated in the last few months.

iCSP is now a regular feature on the ACPIN agenda, and we have enjoyed Chris Manning, the lead moderator and new Chair of London ACPIN, joining us for Executive meetings. Now that the system is robustly in place, there will no doubt be further developments throughout the year and Chris welcomes your ideas. I hope to use iCSP to consult you all on planning for Conference 2008 - we are all aware that funding for CPD remains tight and we spend a considerable amount of committee time planning programmes, often up to a year in advance, to try to ensure wide interest and uptake from the membership. I plan to email around registered members for your ideas and I look forward to your replies. It would be fantastic if Conference and AGM 2008 was representative of as many of your views as possible, and although we clearly cannot meet all the individual requests from such a broad membership, it would be a new venture to gain a consensus in the planning stages.

There is no CSP Congress this

Autumn but we are one of the key CIG's working with the CSP in planning for the re-launch of this event in October 2008. We will not be holding a specific ACPIN Autumn conference but are hoping to have good representation at the UK Stroke Forum in December, and Professor Ann Ashburn is currently assisting on the development of this event on our behalf. We have already suggested some speakers and topics and hope to be a significant part of a parallel session with our rehabilitation colleagues.

ARC has proved disappointing for us this year. Despite excellent work from Emma Forbes and the Communications Sub Group in compiling motions, none were accepted for debate and we were therefore not represented. We hope to hold discussions with the CSP about CIG representation at this event to ensure that it continues to provide a platform for wider debate on clinical, as well as industrial, issues.

Despite this very challenging time in healthcare in the UK, it is evident that so many of you continue to make an enormous contribution to the field of neuro-rehabilitation. The ever-evolving, flexible attitude of neuro-physiotherapists to the constantly changing demands placed on this specialist section of the profession is always present and is no doubt centred in the desire to provide patient-centred excellence in all areas of practice, education and research. I hope that ACPIN in some small way supports your efforts and I am honoured to sit in the Chair's seat for a final year.

#### Best wishes

Nicola

Tara Sharma BSc(hons) SRP Senior neuro-physiotherapist Cambridgeshire PCT Disability Living Centre Lower Pendrill Court Papworth Everard Cambridgeshire CB3 8UY

### "I own my MS, my MS doesn't own me" a community self-management programme for patients with MS – an audit

### INTRODUCTION

Multiple Sclerosis (MS) is the most common progressive disabling neurological condition in young adults. Approximately 2.5 million people worldwide have MS. In the UK there are approximately 85,000 with MS. The average prevalence in the UK for MS is approximately 1.5 per 1000. In Hunts Primary Care Trust (PCT) the incidence is above the national average at approximately 2 per 1000.

Over the last decade there has been a shift of emphasis from hospital to community care leading to a strain on existing community resources (White Paper, DOH 2006). Additionally standards of care for people with MS have been established with an emphasis towards increasing their levels of activity, participation, independence (Langdon 1999, *NICE Guidelines for MS*, *NSF Guidelines for Long-Term Conditions*) and general fitness through health promotion (White Paper, DOH 2005). Therefore, the management of people with MS in the community, being a focus of government policy is ripe for change if such a shift is to be successfully managed.

### PASSIVE MOVEMENTS ARE ONE WAY OF MANAGING THE SYMPTOMS OF MS.

Clients often report social and psychological benefits of having passive stretches applied to their limbs. However, the research into passive stretches has shown that in order to prevent contractures muscles need to be stretched for approximately six hours per day (Tardieu et al 1998, Richardson 2002). Many negative effects have also been shown: heterotrophic ossification (Zeilig et al 2006); no benefit over exercise alone (Moseley et al 2005) and no significant change in joint mobility (Harvey et al 2000).

Management of a person's position over 24 hours in a range of different postures and activities would appear to be a far more effective way of maintaining range.

### "HANDS-ON FACILITATION" AND A TASK-ORIENTATED APPROACH ARE OTHER WAYS OF MANAGING SYMPTOMS OF MS.

A randomized controlled pilot study (Lord SE, Wade DT and Halligan PW 1998) comparing these two approaches to improve walking in people with MS found no significant differences between them.

When combining the above methods of neurophysi-

ologically-based physiotherapy with aerobic training both have been shown to have a positive impact on symptoms of fatigue, regulation of depression, impairment, disability, handicap and well-being (Rasova et al 2006).

Practically, however, it is not possible to provide ongoing intensive 'hands-on' physiotherapy to every client. Rather, such treatment should be provided on a client-needs basis. Physiotherapists can try to influence the amount of aerobic activity clients undertake. The most effective way of ensuring this would be to link them up with mainstream services such as prescription gym schemes, chair-based exercise classes and activities such as yoga and swimming.

Exercise for people with MS has been established as an important intervention in managing symptoms and maintaining fitness levels (Reitburg et al 2006).

A pilot study (Davis C 2006) compared different community-based exercises for people with MS. Participants were allocated to one of two groups. Both went through a three month education phase. The two groups then underwent a six month exercise phase. One of the two groups carried out self-selected exercise and the other physiotherapy exercises.

The study concluded that although exercise is vitally important to people with MS, it need not necessarily consist of a rigidly followed physiotherapy programme and that self-selected exercise had equally beneficial effects.

To have long-term effects and enable clients to be more sustainable in the community therapists need to look at ways of helping them to improve their quality of life and adjust psychosocially to their condition. A programme which increases an individual's ownership of their disease is thought to be the way forward.

Despite the trend of care moving towards the community in the NHS much of the current research into physiotherapy for MS has focused on physiotherapy provision in an inpatient or outpatient basis with little attention to the community (Freeman JA, Thompson AJ 2000).

Of the limited research that has been carried out into ways of managing people with MS in the community the assessment by O'Hara (2001) of the efficacy of a patient-focused professionally-guided self-care programme was interesting.

The intervention group subjects were given an infor-

mation booklet about self-care and received two lots of two hourly sessions over one month during which selfcare based on patient priorities were discussed. The control group received no intervention.

Participants in the intervention group had significantly better mental health and less fatigue, as measured by the SF-36 (the 36-item Short Form Health Survey in Multiple Sclerosis, Ware et al 1993) than participants in the control group.

In view of the available evidence and local demands, therapists in Hunts PCT evaluated a new model of care. This consisted of an eight week rolling programme. The aim of this study was to evaluate:

- 1. Changes in quality of life, activity and participation;
- 2. Cost effectiveness of the service and
- 3. Achievement of clients' goals.

### **METHODOLOGY**

The study was a before and after evaluation. It was a community-based research study, carried out at the MS Therapy Centre, Huntingdon, Cambridgeshire, between May and October 2006. The author, a senior physiotherapist working for Hunts PCT, conducted it.

### PARTICIPANTS

Participants were selected from:

- 1. Patients with MS referred to the Community Therapy and Rehabilitation Service (CTARS) from March 2006 onwards
- 2. Members list from MS Therapy Centre from Hunts PCT
- 3. Clients referred by MS Specialist Nurse
- 4. Patients with MS already known to CTARS
- 5. Self referral by posters displayed in Hinchingbrooke Hospital, Hunts PCT and MS Therapy Centre and by the local branch of the MS Society

Patients were allocated to one of three groups on a firstcome-first-serve basis according to their ability level. More patients responded who fell into the more physically dependent category. Therefore two groups of more physically dependent clients (eight in each) and one group of more physically able (nine clients) were set up.

Having a similar mix of clients within each group allowed the content of the discussion topics to be tailored to their needs. It also promoted group morale and restricting group size overcame the issue of space constraints.

The topics to be included in the eight sessions were chosen after discussions with colleagues and clients and reviews of information from the MS Trust and MS Society and previous published literature (Robinson I, Hunter M, Neilson S 1996).

### **INTERVENTION**

The sessions were delivered over a two-hour period, which was considered sufficient time for discussions, breaks, questions, and demonstrations but not to cause undue fatigue. No previous research could be found on how long sessions should be.

The eight week timetable was considered an appropriate length of time to cover the following topics:

### Week 1 – outcome measures taken and relevant programme information given

The MS specialist nurse also attended this session to inform clients of her contact details should they require help and to answer various questions regarding medication.

### Week 2 – local mainstream services available and financial and practical help

This involved guest speakers from local prescription gym services, chair-based exercise classes, a lifestyle consultant from social services, financial advisor from social services, information about transport locally available for disabled people, Kilverstone car adaptations and employment advisors from The Papworth Trust. The latter advised clients of work opportunities and also how employers can be educated in and assist with people remaining in employment for as long as they wish.

### Week 3 – importance of standing for everyday activity (more physically dependent groups only)/balance and core stability exercises

This involved using equipment such as parallel bars, electric standing frames, turntables with carers and gym balls. Home visits were carried out with clients to set up standing and exercise programmes with them as suitable. Photo booklets were provided to assist them to carry this out correctly at home or in gyms.

### Week 4 – importance of 24 hour positioning (more physically dependent groups only)/balance and core stability exercise progression

The ways in which clients were positioned in bed, in their arm chairs, wheelchairs, standing or carrying out activities and the influence of these on their symptoms were assessed. Positioning photo booklets were then created with the client and where appropriate their carers to assist in influencing their 24 hour positioning in order to have an effect on their tone and range of movement.

### Week 5 – wheelchairs and seating with wheelchair therapist and occupational therapist

Indications for use of wheelchairs and various types were discussed. Each client who was a wheelchair-user then had a chair review with the wheelchair therapist. Any client considering any use of a wheelchair discussed home adaptation options with the occupational therapist.

### Week 6 - pain and spasm management

Triggers of pain and spasm were identified such as pressure areas, poor positioning or a urinary tract infection. Various ways of managing specific types of pain such as TENS, massage, medication, exercise and holistic treatments offered by the MS Therapy Centre were discussed. Ways of managing spasm were reviewed such as standing, stretching, exercise and medication.

### Week 7 – fatigue management with occupational therapist

Clients' activity diaries were reviewed and ways of managing fatigue, pacing and raising energy levels were discussed.

### Week 8 – relaxation session and final outcome measures taken

Relaxation methods were carried out and clients discussed methods that worked for them.

At the end of each discussion clients were assisted in using equipment available to them at the MS Therapy Centre including the Motomed exercise bike, gym balls, plinths, parallel bars and trampette.

Patients were provided with an activity diary sheet each week to complete for the following week to see whether their activity levels increased over the eight week period. It was also used as an indicator of periods of fatigue and to assist with setting pacing strategies. It was also useful as a measure of patient compliance.

Patients were asked about their interests in order to tailor information given to them and set goals.

A SMART (specific, measurable, achievable, realistic and timed) goal was also set with each client during the initial session and was reviewed each week as part of the client's activity diary and then again at the end of the eight weeks.

In the first group session clients were also provided with a booklet *Exercises for people with MS* written by Liz Betts. The intention of the group was not to focus solely on exercises but patients were welcome to ask questions about the booklet.

Each week information leaflets also accompanied the verbal discussions.

Follow up sessions were carried out as appropriate, eg to set up individual standing programmes, 24 hour positioning booklets and to take photographs for these.

On completion of the course patients were encouraged to continue to use the MS Therapy Centre's facilities and advised to continue with as active a lifestyle as possible.

### **OUTCOME MEASURES**

The Therapy Outcome Measures (TOMs) for rehabilitation (Enderby et al 1998) were used. The relevant scales used were: complex and multiple difficulty (*a*) and cognition (*b*).

Each of the TOMS subscales measures relative abilities and difficulties within four domains: impairment, disability, handicap and well-being. There is a total possible score of 20, each component having a maximum score of 5.

Furthermore, the TOMs are also used across the board for Hunts PCT Therapy and Rehabilitation Service (TARS) and Community Therapy and Rehabilitation Service (CTARS) and so were useful as a transferable outcome measure.

The Multiple Sclerosis Impact Scale (MSIS-29) (Hobart J et al 2001) has a total possible score of 145; the scale consists of 29 questions, which measure the subjective impact of MS on the patient's life. The lower the score the less the perceived impact of the disease on aspects of everyday life.

These were measured in the first and final week with the same assessors; the author (physiotherapist) and physiotherapy assistant respectively.

Patients were also asked to complete a satisfaction questionnaire.

Also recorded each week were any units of time spent with the patient during the session, units of time per patient on associated work (eg note writing, referrals to occupational therapist, follow-up sessions to create a 24 hour positioning booklet etc) and attendance.

### RESULTS

### **Cost Analysis**

The total time spent with each client in the group and additional work, taking into account travel, missed sessions or follow-up appointments, was costed at:

**104 hours** (half physiotherapy assistant £8.73/half physiotherapist £12.85 per hour) = **£1,121.95** 

The equivalent time spent treating an equal number of clients in their homes an equal number of times including time for travel and associated work was costed at:

**512 hours** (half physiotherapy assistant £8.73/half physiotherapist £12.85 per hour) = **£5,523.46** 

To calculate TOMs and MSIS29 results non-parametric Wilcoxon statistics were used.

### TOMs COMPLEX AND MULTIPLE DIFFICULTY

### MEAN SCORES FOR COMPLEX AND MULTIPLE DIFFICULTY SCALES (OUT OF 5)

SUBSCALE	MEAN SCORE AT START	MEAN SCORE AT END	SIGNIFICANT IMPROVEMENT?		
			SIGNIFICANT	NON-SIGNIFICANT	
Impairment	3.71	3.77		x	
Disability	3.54	3.75		х	
Handicap	3.67	4.06	x (Wilcoxon Z = $2.45$ , p = $0.014$ )		
Well-being	3.78	4.57	x (Wilcoxon Z = 3.26, p = 0.001)		

### TOMs COGNITION

MEAN SCORES FOR TOM SUBSCALES (OUT OF 5)						
SUBSCALE	MEAN SCORE AT START	MEAN SCORE AT END	SIGNIFICANT IMPROV	/EMENT?		
			SIGNIFICANT	NON-SIGNIFICANT		
Impairment	4.63	4.68		х		
Disability	3.89	4.23	x (Wilcoxon Z = 2.98, p = 0.003)			
Handicap	3.61	4.06	x (Wilcoxon Z = 2.45, p = 0.014)			
Well-being	3.73	4.61	x (Wilcoxon Z = 3.35, p = 0.001)			

### MSIS-29

Mean score at start = 79.41 Mean score at end = 73.04 (a non- significant improvement) However, this improvement is still important clinically as it reflects an improvement in quality of life.	Examples of comments from patient satisfaction questionnaire POSITIVE • "We all felt we haven't been forgotten" • "Found this course very useful in getting me out of the house and meeting the goals I set"	Reasons for people not wishing to participate in the group The recruitment methods were intended to cover as broad a spectrum of patients as possible within the area. The three main reasons people gave for not attending were: • Lack of transport
Attendance rate 79% attendance. 8% UTAs 13% DNAs Goals achieved 98%	<ul> <li>"I found meeting people the best part of the group"</li> <li>NEGATIVE</li> <li>"I feel we should have been told more about drugs out there to help MS sufferers"</li> <li>"I feel the group would be more beneficial for people who are newly diagnosed"</li> </ul>	<ul> <li>Dislike of group setting</li> <li>Dislike of being with other people with MS A request for funding for transport is under consideration by the local branch of the MS Society.</li> </ul>

### DISCUSSION

### **Main Findings**

This study has evaluated a client-centred, communitybased, physiotherapist-lead self-management group for people with MS.

MS is a progressive neurological disease. Body functions are affected by MS, which may result in impairment (physical and/or cognitive incapacity) or 'impairments of structure or function'. This in turn can lead to disability (physical or mental condition that limits movement, senses or activities). When this restricts the ability to function physically, mentally or socially it is termed handicap or 'participation'. Wellbeing has been given several definitions and could be viewed as quality of life or a state of being healthy or happy. (*International Classification of Functioning*, *Disability and Health 2*, World Health Organisation 2001).

Findings from the study indicated that there were significant improvements in well-being and handicap generally and in disability related to cognition.

From previous work with MS clients, an improvement in impairment or disability would be less likely due to the progressive nature of the condition and without a hands-on approach. This is what we found in general apart from disability related to cognition. Clients fed back that this change was due to increasing their social interaction via the programme.

However one patient went from being hoist transferred to turn safe transfers, then being able to stand and step round transfer following a standing programme set up for her at her residential home. This may have been a result of increased motivation from improved well-being.

An improvement in handicap may have been expected and was found to a significant extent. Clinically this is important particularly as the disease is progressive and often affected negatively by hot weather and the project ran over the summer months.

Most of the improvement was in well-being. One client changed from being mainly housebound and sleeping all day, to self-propelling himself in his wheelchair daily to go and get a newspaper, taking the bins out and making a cup of tea for his wife every day.

Two clients began going to the MS therapy centre to attend a seated exercise class whilst their wives went shopping together weekly.

About 50% of people with MS show some cognitive deficits when properly evaluated (Fischer et al 2000). It is more frequently a cause of people with MS ceasing employment than any other symptom, including fatigue and mobility problems (MS Trust publication 2000). Therefore improvements in this aspect were important.

One of the primary aims of rehabilitation for people with MS is to increase their levels of activity, participation, well-being and independence (Langdon 1999; *NICE guidelines for MS, NSF for Long-term Conditions*, Social Care Green Paper 2005). Therefore, it was particularly rewarding to see improvements in handicap and well-being.

The cost analysis has shown this service is costeffective and that a high percentage of client's goals were achieved in addition to the improvements in well-being and disability.

### RECOMMENDATIONS

### 1. Information provision

Information given by consultant neurologists and MS Specialist Nurses near time of diagnosis regarding education groups and contacts.

### 2. Transport provision

Transport was a barrier to attending the programme. Therefore, transport options and funding would be well-worth investigating in the future.

### 3. Comparing exercise intervention with education intervention

Many of those in the more physically dependent group

wanted more exercise participation as they had already learnt their own management strategies.

Reitburg MB et al (2006), performed a qualitative analysis of evidence for exercise therapy. It showed strong evidence in favour of exercise therapy compared to no exercise therapy in terms of muscle power functions, exercise tolerance functions and mobilityrelated activities. However, no evidence was found for benefits of exercise therapy on outcome of well-being, as measured with the MSIS-29 (O'Connell 2003) and the Sickness Impact Profile (Petajan 1996).

Therefore future research might be geared towards comparing exercise or education.

### 4. Social involvement

Feedback from satisfaction questionnaires and client comments indicated that the social interaction aspect of the programme was highly valued. This is a point to bear in mind when planning future provision.

### IMPLICATIONS FOR CURRENT PRACTICE

As this is patient-centred, cost-effective and in keeping with government guidelines and effective in terms of quality of life, handicap and well-being and requires minimal resources, it would be appropriate for other clinicians to run in other areas of the country. The study included all those with a definite diagnosis of MS therefore is easily transferable to most community settings when considering management of people with MS.

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Do you have an interest in core stability exercises for improving balance in people with MS?

Would you like to be involved in a collaborative UK research project, facilitated and supported by the Therapists in MS group?

### Background

Following consultation with other UK therapists, the TiMS research project group have identified a research question for investigation:

### **Q:** Does a standardised set of core stability exercises improve balance in people with progressive MS?

Using an innovative approach to research, the TiMS project group will co-ordinate a number of physiotherapists from different UK centres to each undertake a single case study. The project group will provide a standardised protocol for the study and support and guidance to volunteer researchers.

If you are a physiotherapist with a special interest in this area and would like to find out more about being involved as a researcher, please send a brief summary of your relevant experience to the contact details below, to register your interest by the end of May 2007

### Please register your interest with:

Catherine Thornley, MS Trust, Spirella Building, Bridge Road, Letchworth, SG6 4ET t 01462 476704 or e therapists@mstrust.org .uk

Melanie Forsdike Senior Physiotherapist Community Stroke Tean Sheffield

### **Do efficient ground reaction forces** in the feet influence postural control for the activity of sit to stand?

### ABSTRACT

Bobath is a concept employed for rehabilitation of the neurologically impaired person. This study investigates the effects of a treatment regime, based on the Bobath concept, on two patients following cerebral vascular accidents.

The aim of the treatment is to restore the patients' ability to sit to stand efficiently and independently. Sit to stand is one of the most demanding everyday tasks performed regularly, and lack of independence in this action has been reported to be one of the most likely factors associated with risk of institutionalisation.

A theoretical understanding of the specific neurophysiology relevant to sit to stand has been central to devising the appropriate therapy. The treatment plan has specifically looked at foot contact with the supporting surface and postural stability to improve the activity of sit to stand.

In order to assess the success of treatments, three main objective markers were used: painted footprints to measure foot contact with the supporting surface, TELER scores specific to sit to stand, and photographs pre and post treatment to demonstrate postural alignment and compensation strategies.

A significant improvement was measured on all the markers with both patients being able to stand independently after treatment, with both feet in contact with the floor.

### INTRODUCTION

The Bobath concept has evolved for patients with lesions of the upper motor neurone. It involves the whole patient, his sensory, perceptual and adaptive behaviour, as well as his motor problems (Bobath 1990).

The Bobath concept focuses on manipulation and activation of afferent information by facilitation via the therapist: it takes into account neuro-plasticity, giving novel and ever-changing input; improving efficiency of movement controls and function; and relearning (BBTA 2005).

This patient case study aims to identify whether treatment, based on the Bobath concept, can achieve the functional goal of independent sit to stand (STS) in two patients post-cerebral vascular accident (CVA).

This study discusses the importance of somatosensory information received through the feet, and how effective postural control is the foundation for all movement. The case study presented also illustrates various methods of therapeutic intervention that combine to stimulate and re-educate the central nervous system (CNS) to improve two patients' quality of STS.

The hypothesis of the study is, therefore, that improvement of the foot contact to the supporting surface improves somatosensory information and, in turn, postural control for STS.

The success of the treatment is determined by the patients' ability, post treatment, to STS independently and efficiently, and this is measured using three main objective markers.

Written consent was obtained from both patients.

### LITERATURE REVIEW AND THEORETICAL PRINCIPLES

Edwards (2002) states that for normal movement we need normal postural tone, reciprocal innervation, sensorimotor feedback and feedforward systems, and balance reactions. If disruptions to any of these components occur, for example following a CNS lesion, our ability to function (or move 'normally') is severely affected.

It is one of the key components of the Bobath concept that normal postural control forms the necessary background for normal movements and for functional skill (Bobath 1990). Postural control allows us to maintain an upright posture against gravity by providing us with orientation and balance (equilibrium). To achieve this, the CNS receives information from the visual, vestibular and somatosensory systems regarding the body's position and movement. It then assimilates the information to produce an appropriate response (Edwards 2002).

When a patient has a stroke, the senses (visual, vestibular and somatosensory systems) contributing to postural control may be affected, influencing the ability to recruit postural tone. Associated sensory and perceptual disturbances add considerably to a patient's (motor) deficit and adversely influence the chances of recovery from the functional disability and, therefore, the ability to initiate and perform normal movements. Patients with sensory deficit lack the urge to move, and do not know how to move limbs or segments of limbs which they do not feel properly (Bobath 1990, Shumway-Cook & Woollacott 2001).

The somatosensory system (proprioceptive,



Phase 1 Movement of the feet backwards to allow generation of forward momentum of the upper body through flexion of the trunk, from a large BOS to a smaller BOS. The knees move forward over the feet producing dorsiflexion at the ankles.

### Figure 1 - Four phases of STS



**Phase 2** As the bottom leaves the seat, the transfer of momentum from the upper body to the total body, allows lift of the body.



knees, moving the body vertically. The legs extend as the body moves in to the upright position with a decreased amount of activity in the quadriceps as the knee angle approaches zero.



Phase 4 Stabilisation phase. following complete extension.

of the normal ankle strategy. This contributes to the evidence that plantar cutaneous afferents influence balance control. To conclude, the processing of cutaneous messages

from the soles along with other sensory messages allow the CNS to constantly be aware of the body position in space, and to trigger necessary responses to produce the appropriate maintaining or restoring action.

### **MOVEMENT ANALYSIS OF STS**

Standing from sitting is an activity which is performed frequently in daily life. The ability to stand up and sit down is in itself essential to independence. STS is a prerequisite to the independent performance of other actions, such as transfers and walking, which require the ability to get into the standing position (Chou et al 2003, Carr & Shepherd 1998, Shumway-Cook & Woollacott 2001).

STS requires the ability to move the body mass forward from over a large BOS (thighs and feet) to a small BOS (feet) and to extend the lower limb joints (knees, hips and ankles) to raise the body mass over the feet (Carr & Shepherd 1998) as illustrated in Figure 1.

Patients with neurological deficits, for example, post CVA, find it difficult to STS. Such problems may include restricted joint range at the foot and ankle and abnormal tone within the trunk and pelvis, and inadequate force generation, all of which may preclude or impair the initial forward lean (Edwards 2002). In addition the automatic program for rising becomes asymmetrical because of weakness of the affected side and loss of postural control (Chou et al 2003, Shumway-Cook & Woollacott 2001).

cutaneous, and joint receptors) provides the CNS with position and motion information about the body's position in space with reference to supporting surfaces (Shumway-Cook & Woollacott 2001). Studies have shown that although all of the sensory inputs are important to postural control, when the support surface information is accurate there is least postural sway and loss of balance (Meyer, Oddsson & De Luca 2004, Shumway-Cook & Woollacott 2001).

Cutaneous afferent messages from the main supporting zones of the feet have sufficient spatial relevance to inform the CNS about the body position in space with reference to supporting surfaces and consequently adapt and regulate postural response (Magnusson et al 1990, Kavounoudias, Roll & Roll 1998, Meyer, Oddsson & De Luca 2004).

As the feet are the main boundary between the body and the ground in all upright postures, ie standing, single leg stance and gait, it could be hypothesised that if the foot is not fully in contact with and accepting the supporting surface the somatosensory information will be inaccurate leading to changes in postural control (Bradfield 2005, Shumway-Cook & Woollacott 2001). As Edwards (2002) reported, for the maintenance of balance in standing or walking the feet need to be able to respond appropriately and adjust to the base of support (BOS) they are in contact with.

In a study by Kavounoudias, Roll & Roll (1998) they anaesthetised the plantar sole of foot causing loss of foot sensitivity. In all cases this resulted in increased postural instability. In addition the loss of foot sensitivity resulted in a new strategy to compensate the body disequilibrium, that is, an increased hip strategy instead







Standing left foot

Standing right foot

Figure 2 – Normal model footprints

### **CLINICAL CASE ANALYSIS**

The purpose of this case study is to investigate the efficacy of treatment interventions (based on the Bobath concept) in improving foot contact with the supporting surface and postural control. Two patients were chosen who had recently suffered strokes and had altered foot contact to the supporting surface, impacting their ability to STS.

### **OUTCOME MEASURES**

Mawson and McCreadie (1995) state that recent changes in the National Health Service have resulted in an increasing need for physiotherapists to quantify the outcome of their interventions.

In this case study several indicators were used to measure any changes in both patients' functional ability with specific reference to independent STS. These were:

- Painted footprints to measure foot contact with the supporting surface. As quoted in Bradfield (2005) 'this technique gives an accurate, reliable and permanent image of the weight bearing contact of the plantar surface of the foot with the floor'.
- Specific TELER indicators to evaluate STS (please refer to *Appendix 1*)
- Photographs, taken before and after treatment to demonstrate postural alignment and progress within treatment.

In both case studies painted footprints were taken in sitting (knee's flexed to 105° by raising the bed as necessary), and in standing, to assess foot contact with the supporting surface pre-treatment and at the end of the ten treatment sessions over two weeks of treatment.

Painted footprints of a normal model have been included for comparative purposes (see *Figure 2*). They show contact with the ground through the heel, lateral border of the foot, pad under the metatarsal heads and pads of the distal phalanges.

### **PATIENT A**

Patient A is a 70 year old gentleman who suffered from a CVA on 11th August 2005. See *Appendix 2* for more details.

### Treatment plan and reasoning for Patient A

From assessment findings, as shown in *Appendix 2* and through *Figures 3a*, *3b* and *Figure 4*, it was postulated that Mr A was unable to STS effectively due to:

- Hypersensitivity of the right lower limb resulting in associated reaction of the right foot and ankle into plantarflexion and inversion, and decreased orientation to the floor
- Decreased range of movement (ROM) at his right ankle, knee and hip, caused by tightening in gastrocnemius, soleus, hamstrings and trunk side flexors
- Retracted right pelvis/hip associated with trunk side flexion to the right
- Decreased selectivity right lower limb, especially extensor activity
- Central instability

With these finding in mind, a treatment plan was devised (see *Table 3*) and carried out as in *Table 1*.

TREATMENT INTERVENTIONS FOR PATIENT A										
VISIT	1	2	3	4	5	6	7	8	9	10
1	1	1	1		1	1				
2	1	1		1	1			1		
3	1	1	1	1	1	1	1	1		
4		1	1		1	1	1	1		
5		1	1		1	1	1	1	1	
6	1				1	1		1	1	
7		1	1	1			1		1	1
8					1	1		1		1
9						1		1	1	1
10					1				1	1
Table 1         Refer to Table 3 for details of treatment intervention										



#### Head rotated to right

Left upper limb support needed

Right arm & hand resting in flexion pattern

Retracted right hip & pelvis, & shortened right trunk leading to side flexion

Plantarflexed and inverted ankle, leading to minimal contact with the floor and therefore altered somatosensory feedback

Sitting

Figure 3a - Patient A - STS pre-treatment



### Sitting left foot

 Good contact through out especially lateral border of foot, heel, under metatarsal heads and toes



Sitting right foot

- No contact under toes and heel
   Good contact under pad of metatarsal heads
- Decreased contact lateral border of foot



Fixing with left upper limb

Flexion pattern right upper limb

Right hip retracted & externally rotated, trunk lacking extension

Weight bearing only through left lower limb

Plantarflexed & inverted right ankle & minimal foot contact with the floor

Figure 3b - Patient A - STS pre-treatment

Standing



Standing left foot
Contact remains good but increase in contact area possibly due to sliding on floor as move from sitting to standing



### Standing right foot

- Contact remains poor through toes and heel
- Decreased contact under lateral border and metatarsal heads of foot compared with when sitting
- Overall minimal contact with floor

### Figure 4 - Patient A pre-treatment footprints

### **PATIENT B**

Patient B is a 73 year old gentleman who suffered from an extension to a previous CVA on 28/12/05. See *Appendix 2* for more details.

### Treatment plan and reasoning for Patient B

From assessment findings, as shown in *Appendix 2* and through *Figures 5a*, *5b* and *Figure 6* (overleaf), it was postulated that Patient B was unable to STS effectively due to:

- Reduced sensation and proprioception throughout his right side especially the foot leading to decreased somatosensory input
- Lack of ROM at his right ankle, tightening of gastrocnemius and soleus
- Lack of right lower limb extension
- Decreased postural stability/balance

With these findings in mind, a treatment plan was devised (see *Table 3*) and carried out as in *Table 2*.

TREATMENT INTERVENTIONS FOR PATIENT B										
VISIT	1	2	3	4	5	6	7	8	9	10
1	1	1	1		1			1		
2	1				1			1	1	
3	1	1	1		1				1	
4		1	1	1	1		1	1	1	
5		1	1	1		1	1	1		1
6						1	1	1	1	1
7	1				1			1	1	
8					1		1	1		1
9					1			1	1	1
10					1			1	1	1
Table 2         Refer to Table 3 for details of treatment intervention										



Elevated right shoulder, head side flexed and rotated to the left

Decreased weight bearing through right side, with subsequent increase weight bearing through left side

Right hand held in tight flexed posture

Big toe not in contact with the floor, reducing somatosensory feedback

Sitting

Figure 5a - Patient B - STS before treatment



### Sitting left foot

- Decreased contact under pad of medial metatarsal heads
- Contact under heel & lateral border



### Sitting right foot

- No contact under toes
- Decreased contact under pad
   of modial mototorical boards and
- of medial metatarsal heads and lateral border
- Fair contact through heel



Figure 5b - Patient B - STS before treatment



Standing left foot

contact

- Slightly decreased contact under mid toes and middle of
- metatarsal heads

  Good lateral border & heel



Right upper limb associated reaction

Falling backwards, weight bearing

Increased weight bearing through

left lower limb, over pronated left foot and hyper-extended knee

Weight bearing through heel, no toes on the right foot in contact with the

through heels

floor

### Standing right foot

- Still no contact under toes
- Increase in area of lateral border and heel contact with floor

TREATM	AENT INTERVENTIONS	
NO	TREATMENT	CLINICAL REASONING
1	Specific foot mobilisations of the right foot, ankle and crural muscles and desensitisation of the foot (see <i>Figure 7b</i> )	To improve foot contact with the floor. Even a small amount of soleus shortening can create a problem in STS as the ankles must dorsiflex well beyond plantigrade position. Realignment and mobilisation promotes increased range of movement and firing.
2	Selective hip extension in crook lying (see <i>Figure 7c</i> )	Facilitates lower abdominal activity to tilt the pelvis and encourages core stability. Proximal hamstrings length is crucial as many stroke patients will have lengthened hamstrings due to their prolonged immobility. Together core stability and hip extension promote the recovery of postural control (BBTA 2005).
3	Hip extension in side lying (see <i>Figure 7d</i> ) and supine	This prepares the required muscle activity for the various components of walking. Involving the foot in this activity stimulates central pattern generator activity and gives the idea of walking. It also stimulates the cortex due to the large cortical representation of the distal key points, giving increased sensory feedback (BBTA 2005). By demanding distal foot movement – demanding proximal pelvic stability. Inadequate hip extension causes retraction of the pelvis.
4	Trunk side flexors stretch (see Figure 7e)	Aiming to recruit trunk extension and promote linear extension, providing stability for distal movement and for the affected side. Also gaining alignment to normalise tone and ability to facilitate selective movement patterns.

Figure 6 - Patient B pre-treatment footprints

TREATA	TREATMENT INTERVENTIONS (CONTINUED)					
NO	TREATMENT	CLINICAL REASONING				
5	Facilitation of STS (equal weight bearing)	To increase hip and knee activity as weight moves over the feet (Carr & Shepherd 1998). This causes anterior translation of the tibia over the foot, producing dorsiflexion and increased pressure through the soles of the feet. In addition STS improves muscle strength and motor control of the affected leg (Chou et al 2003). Alterations of surface height were added to keep the exercise novel.				
6	Asymmetrical stand down from raised bed (right side forward)	To increase weight bearing though the right lower limb and increase dorsiflexion range as well as increase extensor activity through the right side. In addition being in high sitting prepares the patient for standing as he is already extended (BBTA 2005).				
7	Stop standing with facilitation of proximal hamstrings (see <i>Figure 7f</i> )	To improve strength and control of the lower limb extensor muscles and to develop control of changing from concentric to eccentric muscle activity (Carr & Shepherd 1998).				
8	Lateral weight-transference in standing	Focusing on maintaining the COM inside the BOS. With weight transference onto one leg there is a resulting increase in pressure under one foot, driving proximal extension and promoting control of the body's centre of mass.				
9	Steps ups and down and stairs practice (see Figure 7a)	To promote hip extension. In walking up stairs, the extensor muscles have to generate much larger forces than walking (Carr & Shepherd 1998).				
10	Gait re-education (forwards and backwards)	To put the above components into a functional, goal orientated activity. Walking backwards improves walking forwards by increasing extensor activity.				

Table 3



Figure 7a Hip extension through step-ups, facilitation of gluteals and quadriceps



Figure 7b Specific mobilisations of foot and ankle



Figure 7c Selective hip extension in crook lying (facilitation of proximal hamstrings)



*Figure 7d* Hip extension in side lying, facilitating through the foot, stabilising at the pelvis



*Figure 7e* Trunk side flexors stretch, stabilising at the ribs



Figure 7f Stop standing – with facilitation of proximal hamstrings

### **RESULTS OF TREATMENT**



Improved orientation to midline & more extended posture

Relaxed left upper limb and leg, not fixing

Improved range and positioning of right upper limb

Both feet in contact & orientated with the floor

Sitting

Figure 8a - Patient A - STS post treatment



### Sitting left foot

- Continued contact under heel, lateral border of foot and pads under metatarsal heads
- Less clarity of toe contact



#### Sitting right foot

- Improved contact with floor overall
- Contact under heel, lateral border and pad under metatarsal heads and toes
- Minimal contact with big toe but significant improvement to pre-treatment



Figure 8b – **Patient A** – STS post treatment



### Standing left foot

- Sliding of foot resulting in less clarity of toes but all in contact with floor
- Contact through heel, lateral border of foot pad under metatarsal heads and toes



### Standing right foot

- Greatly improved contact overall with floor
- Contact under all appropriate areas, heel, lateral border of foot, pad under metatarsal heads
- Minimal contact second toe

Figure 9 – Patient A post treatment footprints



Figure 10a - Patient B - STS post treatment

Decreased elevation of shoulders, right shoulder still slightly raised

Weight generally more central and more upright posture

Relaxed right upper limb

All toes in contact with the floor



Standing – no support required but close supervision

Figure 10b - Patient B - STS post treatment

Better control of balance, weight more evenly distributed through feet, and more upright posture

Slight retraction of left pelvis and protraction right pelvis

Reduced associated reaction right upper limb, arm relaxed by side

Improved orientation of foot to floor with toes and pad of metatarsal heads in contact with the floor

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Sitting left foot

- Improved contact throughout
- Contact under all appropriate areas



- Sitting right foot

  Improved contact, especially
- under toes

   Contact through heel, lateral
   border of foot pad under
   metatarsal heads and toes



- Standing left foot
- Improved contact under toes
- Continued contact under all appropriate areas



Standing right foot

- Significantly improved contact under toes
- Increased contact under heel

Figure 11 - Patient B post treatment footprints

TELER scores were measured on each visit. These results are presented in *Table 4* and *Figure 12*.

TELER SCORES (at beginning, middle and end of treatment)						
VISIT	SCORES					
	PATIENT A	PATIENT B				
1	0	2				
5	2	4				
10	4	5				
Table 4						

### TELER INDICATOR GRAPH



### **DISCUSSION AND CONCLUSION**

Lack of independence of STS limits full participation in everyday activities and ensures an overall deterioration of lower limb muscle function. STS is therefore an important action to emphasise in rehabilitation, not only for increasing the individual's independence but also for its role in increasing muscle strength in the lower limbs. In support of this, Chou et al (2003) found that those patients who have better STS motor control also have better gait performance.

Accurate afferent information to provide feedforward and feedback are essential for the task of STS, in agreement with Hesse et al (1998) who stated 'utilisation of afferent proprioceptive information for improvement of motor function is one of the main strategies of experienced therapists'.

From the photographs and footprints of both patients (*Figures 8-11*), a marked improvement in their right foot contact and orientation with the floor can be observed. This increase in contact, and therefore increase in accuracy of somatosensory information, will provide dynamic stability to stabilise the foot and improve access to the ankle strategy and recruitment of extensor activity and, in turn, postural control (Edwards 2002). These results are in agreement with Magnusson et al (1990). They established that afferent information from the cutaneous mechanoreceptors of the feet have properties that contribute significantly to postural control, and that visual information could not suppress or compensate for loss or reduction of somatosensory information from the soles.

It is important to highlight that even if a foot is in contact with the floor it is not necessarily reacting to the floor. Only a reactive foot with the supporting surface will receive accurate information from the somatosensory system to improve postural control. Decreased postural control impairs the ability to effectively control movements of the COM, and represents a major constraint on the STS task (Shumway-Cook & Woollacott 2001).

In addition, both patients' affected right upper limb

improved greatly (*Figure 8* and *10*). The associated reaction in their right upper limb significantly reduced despite no direct intervention on the arm. This was felt to be due to an increase in proximal control which is a prerequisite for distal selective movement (Shumway-Cook & Woollacott 2001, BBTA 2005), providing potential for functional upper limb activity.

Both patients also demonstrated improvement in ankle ROM allowing their feet to be positioned at the optimum 75° dorsiflexion (10cm from a vertical line drawn from the middle of the knee joint in sitting) for STS (Carr & Shepherd 1998). This improved extensor force and the ability to bring the body mass forward over the feet. In addition, once standing, both patients could maintain their COM within their BOS. This obviously plays an important role in balance. In addition, this increase in dorsiflexion improved heel strike during gait consequently allowing further recruitment of extensor activity. Heel contact was considered important as it feeds into antigravity activity through the vestibulospinal system, thus loading the foot to give CPG activity (BBTA 2005). In addition, heel contact provides an active stretch to the calf muscles and Meyer, Oddsson & De Luca (2004) concluded in their study that heel sensation through heel strike is particularly important for generating successful stepping responses.

Post treatment Patient B's gait pattern improved sufficiently to allow him to mobilise independently without a stick whilst Patient A was able to take his first steps with minimal facilitation/assistance of two.

Improved postural alignment was also demonstrated post treatment as seen in *Figures 8* and *10*. Facilitation of symmetry during STS activities was of importance as symmetrical weight bearing enhances both progression and stability during the task (Shumway-Cook & Woollacott 2001). It is important to gain alignment of all keypoints in postural sets in order to normalise tone and facilitate selective movement patterns. Tallis & Pomeroy (2002) reviewed several pieces of research in their paper which demonstrated that asymmetries resulted in poorer outcomes in individuals compared to patients without asymmetry. In addition Chou et al (2003) stated asymmetric dynamic posture and movement is the most prevalent locomotor deficit of stroke related hemiparesis.

It was hypothesised that improvement of the foot contact to the supporting surface would increase somatosensory information and therefore postural control to improve the efficiency of STS. The results of this study have demonstrated this to be the case with an improvement of the movement pattern of STS in both patients.

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### **APPENDIX 1 – TELER**

A TELER indicator is an ordinal measuring scale for tracing change, it has reference points, coded 0-5, that are defined to show clinically significant progress during treatment, (Le Roux 1993).

The TELER outcome indicator was chosen as it could be tailored specifically to the patient's and therapist's goals.

The indicator used in these case studies is shown below:

### Sit to stand

- 0 Able to stand with facilitated assistance x 2
- 1 Able to stand with assistance x 1
- 2 Able to stand with minimal assistance x 1 (including physical & extrinsic feedback)
- 3 Able to stand independently using upper limbs to assist
- 4 Abe to stand independently using light touch
- 5 Able to stand independently without using upper limbs

### APPENDIX 2 – CASE STUDIES Patient A

Patient A was referred to the community assessment and rehabilitation team (CART), Sheffield, on his discharge from hospital, 3 January 2006, following a cerebral vascular accident. He was admitted to hospital on 11 August 2005 with right sided weakness and diagnosed with a left frontal infarct following head CT. He was initially managed on the stroke unit.

Past medical history Heavy smoker and drinker Hypertension

Myocardial infarction 2000 High cholesterol

Social history Owns a car driver training centre Lives alone with his dog Supportive family close by

On discharge from hospital Mr A was sleeping downstairs on a hospital bed, transferring via banana board with assistance x 1, and standing with maximal facilitation x 2. Severe expressive and receptive dysphasia. Prior to his CVA Patient A was working full-time, drove and was independent with all activities of daily living.

### Identification of main problems on initial assessment

- Hypersensitive right leg
- Overactive left side, fixing/pulling with left upper limb
- Associated reaction right leg
- Abnormal posturing of the right foot and ankle into plantarflexion and inversion leading to decreased contact with the floor
- Lack of ROM right ankle, unable to achieve dorsiflexion tightening in gastrocnemius and soleus
- Associated reaction right upper limb resulting in tight flexion pattern
- Poor alignment right side, retracted right hip/pelvis and side flexed trunk
- Executive problems lack of insight and impulsive at times. Occasional difficulties following instructions
- Central instability

### Patient goals (difficult to fully identify due to dysphasia)

- To walk independently
- To be independent with ADL's
- To sleep upstairs
- To be able to leave the house

### Therapy goals

Working towards achievement of patients own goals by:

- Improving selective trunk/pelvic control (postural control)
- · Increasing range at right ankle to achieve foot contact with the floor
- · Promoting even weight transference in standing
- · Increasing selective hip and knee activity, especially extension
- Improving alignment of right side

### Patient B

Mr B was referred to CART through the rapid stroke assessment clinic (RSAC) on 29 December 2005. He was referred following what they thought was an extension to a previous CVA but still awaiting further investigations. His CT later showed an area of high density in the left basal ganglia, (his previous image from 2003 also showed a haemorrhage in this region). The changes present on the current scan may represent dilated vessels related to an AVM or possibly an underlying cavernoma (cavernous angioma) which has bled.

### Past medical history Hypertension

Vascular disease – CABG
MI x 4
Angina
High cholesterol
NIDDM – type two
CVA – 2003 Left basal ganglia haematoma

### Social history

Lives alone Retired Very involved with local church

On initial assessment following referral from RSAC Mr B was mobilising with supervision using a walking stick and sleeping upstairs.

### Identification of main problems on initial assessment

- Reduced sensation and proprioception through out right side especially in the foot leading to decreased somatosensory input
- Associated reaction right upper limb
  Reduced selectivity right pelvis/trunk
- Lacking right lower limb extension and selectivity
- Weight bearing through heels in standing, toes not accepting BOS
- Decreased postural stability/decreased balance
- Decreased right scapula stability
- Lack of ROM right ankle, unable to achieve dorsiflexion tightening in gastrocnemius and soleus
- Low in confidence

### Patient goals

- To mobilise independently
- To use right upper limb in functional activities e.g. making pastry
- To be independent in kitchen activities
- To go out by bus

### Therapy goals

Working towards achievement of patients own goals by:

- · Sensory input to right side
- Improving selective trunk/pelvic control (postural control)
- Increasing range at right ankle to achieve foot contact with the floor
- Promoting even weight transference in standing
- Increasing selective hip and knee activity, especially extension
- Improving alignment of right side
- Improving weight transference forward

### Articles in other journals

### ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION Vol 87. No 7

• Brunelli S et al Functional status and factors influencing the rehabilitation outcome of people affected by above knee amputation and hemiparesis pp995-1000.

• Flansbjer U et al Knee muscle strength, gait performance and perceived participation after stroke pp974-980.

 Fleuren J et al Influence of posture and muscle length on stretch reflex activity in post-stroke patients with spasticity pp981-988.

 Lord S et al The effect of environment and task on gait parameters after stroke: a randomised comparison of measurement conditions pp967-973.

• McCarthy M et al Self reported psychosocial health among adults with traumatic brain injury pp 953-961.

• Rabadi M et al Comparison of the action research arm test and the Fugl-Meyer assessment as measures of upper extremity motor weakness after stroke pp962-966.

• Stuifbergen A et al Exercise, functional limitations, and quality of life: A longitudinal study of persons with multiple sclerosis pp935-952.

### Vol 87, No 8

 Szaflarski J et al Cortical reorganisation following modified constraint -induced movement therapy: A study of four patients with chronic stroke pp1052-1058.

• Tang A et al Maximal exercise test results in subacute stroke pp 1100-1105.

#### Vol 87, No 9

• Dibble L et al The safety and feasibility of high-force eccentric resistance exercise in persons with Parkinson's Disease pp 1280-1282. • Finlayson M et al Risk factors for falling among people aged 45 to 90 years with multiple sclerosis pp 1274-1279.

• Kamper D et al Weakness is the primary contributor to finger impairment in chronic stroke pp 1262-1269.

• Kwok T et al Quality of life of stroke survivors: A one year follow-up study pp 1177-1182.

 Patel S et al Changes in motorneurone excitability in hemiplegic subjects after passive exercise when using a robotic arm pp 1257-1261.

### Vol 87, No 10

• Carnevale G et al A natural setting behaviour management programme for persons with acquired brain injury: A randomised controlled trial pp1289-1297.

 Tong R et al Effectiveness of gait training using a electromechanical gait trainer, with and without functional electric stimulation, in subacute stroke: A randomised controlled trial pp1298-1304.

• Uswatte G et al Validity of accelerometry for monitoring real-world arm activity in patients with subacute stroke: evidence from the extremity constraint- induced therapy evaluation trial pp1340-1345.

#### Vol 87, No 11

• Ivanhoe C et al Intrathecal baclofen management of post stroke spastic hypertonia: Implications for function and quality of life pp1509-1515.

• Messier S et al Kinematic analysis of upper limbs and trunk movement during bilateral movement after stroke pp1463-1470.

• Moriello C et al Development of a position specific index of muscle strength to be used in stroke evaluation pp1490 - 1495.

 Suzuki M et al Predicting recovery of upper body dressing ability after stroke pp1496-1502.

### Vol 87, No 12

• Lang C et al Measurement of upper extremity function early after stroke: Properties of the Action Research Arm Test pp1605-1610.

- Keane S et al Use of Fresnel Prism glasses to treat stroke patients with hemispatial neglect pp 1668-1672.
- Kunik C et al Time to rehabilitation admission and associated outcomes for patients with traumatic brain injury pp 1590-1596.
- Mackintosh S et al Balance score and a history of falls in hospital predict recurrent falls in the six months following stroke rehabilitation pp 1583-1589.
- Ploutz-Snyder L et al Evaluation of spastic muscle in stroke survivors using magnetic resonance imaging and resistance to passive motion pp1636-1642.
- Walker W et al Occupational categories and return to work after traumatic brain injury: A multicenter study pp1576-1583.

### Vol 88, No 1

• Chitralakshmi K et al Relationship between step length asymmetry and walking performance in subjects with chronic hemiparesis pp43-49.

 Halsaa K et al Assessment of interrater reliability and internal consistency of the Norwegian version of the Berg Balance Scale pp43-49.

- Patterson S et al Determinants of walking function after stroke: Differences by deficit severity pp115-119
- Whitney S et al The reliability and validity of the four square step test for people with balance deficits secondary to vestibular disorder pp 99-104.

### THE BRITISH JOURNAL OF OCCUPATIONAL THERAPY Vol 70, No 1

• Brott T et al Occupational disruption: living with motor neurone disease pp24-31.

### CLINICAL REHABILITATION Vol 20, No 1

• Budh C et al Life satisfaction in individuals with spinal cord injury and pain pp89-96.

 Kong K A randomised controlled study of botulinum toxin A in the treatment of hemiplegic shoulder pain associated with spasticity pp 28-35.

- Mastos M et al Goal-directed training: linking theories of treatment to clinical practice for improved functional activities in daily life pp47-55.
- Pohl M et al Repetitive locomoter training and physiotherapy improve walking and basic activities of daily living after stroke: a single-blind, randomised multicentre trial pp 17-27.
- Riley G Stress and depression in family carers following traumatic brain injury: the influence of beliefs about difficult behaviours pp82-88.

### Vol 20, No 7

 Grasel E et al Long term effects of the intensification of the transition between inpatient neurological rehabilitation and home care of stroke patients pp577-583.

 Linder A et al Evaluation of the Swedish version of the modified elderly mobility scale (Swe M-EMS) in patients with acute stroke pp584-597.

 Marklund I et al Effects of lower limb intensive mass practice in post stroke patients: single-subject experimental design with long term follow up pp568-576.

- Menon-Nair A et al Assessment of unilateral spatial neglect post stroke in Canadian acute care hospitals: are we neglecting neglect? pp623-634.
- Skinner A et al The use of standardised outcome measures in rehabilitation centres in the UK pp609-615.

### Vol 20, No 8

 De Jong L et al Contracture preventive positioning of the hemiplegic arm in subacute stroke patients: a pilot randomised controlled trial pp656-667. • Rydwyk E et al The effect of exercise of the affected foot in stroke patients – a randomised controlled pilot trial pp645-655.

• Van Baalen B et al Reliability and sensitivity to change of measurement instruments used in a traumatic brain injury population pp686-700.

### Vol 20, No 9

• Ennis M et al A randomised controlled trial of a health promotion education programme for people with multiple sclerosis pp783-792.

• Hurn J et al Goal planning as an outcome measure: a systematic review pp 756-772.

• Levak W et al *ls goal planning in* rehabilitation effective? pp739-755.

• McNamara P Life goals of patients with Parkinson's Disease: a pilot study on correlation with mood and cognitive functions pp818-826.

• Winkens I Manifestations of mental slowness in the daily life of patients with stroke: a qualitative study pp827-834.

### Vol 20, No 10

 Howe J et al The community balance and mobility scale – a balance measure for individuals with traumatic brain injury pp885-895.

• Simpson G et al Improving the rehabilitative management of client sexual health concerns after neurological disability: evaluation of a staff sexuality training programme in New Zealand pp847-859.

 Svensson E et al Hand function in Charcot-Marie-Tooth: test-retest reliability of some measurements pp896-908.

 Yang Y et al Task orientated progressive resistance strength training improves muscle strength and functional performance in individuals with stroke pp 860-870.

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• Yavuzer G et al The effects of balance training on gait late after stroke: a randomised controlled trial pp960-979.

### Vol 20, No 12

 Bjorkdahl J et al Does a short period of rehabilitation in the home setting facilitate functioning after stroke? A randomised controlled trial pp 1038-1049.

• Donkervoort M et al The course of apraxia and ADL functioning in left hemisphere stroke patients treated in rehabilitation centres and nursing homes pp1085-109.

 Richards L et al Limited dose response to Constraint-Induced Movement Therapy in patients with chronic stroke pp1066-1074.

• Sheehan J et al A randomised controlled pilot study to obtain the best estimate of the size of the effect of a thermoplastic resting splint on spasticity in the stroke-affected wrist and fingers pp1032-1037.

### PHYSICAL THERAPY Vol 86, No 9

• Tong R et al Gait training of patients after stroke using an electromechanical gait trainer combined with simultaneous functional electrical stimulation pp1282-1294.

• Underwood J et al Pain, fatigue and intensity of practice in people with stroke who are receiving constraint-induced movement therapy pp1241-1250.

#### Vol 86, No 10

• Behrman A et al Neuroplasticity after spinal cord injury and training: an emerging paradigm shift in rehabilitation and walking recovery pp1406-1425.

• Frick E et al Combined use of repetitive task practice and an assistive robotic device in a patient with subacute stroke pp1378-1386.

 LeBrasseur N et al Muscle impairments and behavioural factors mediate functional limitations and disability following stroke pp1342-1350.

 Morris M Locomotor training in people with Parkinson disease pp1426-1435.  Sun S et al Application of combined botulinum toxin type A and modified constraint induced movement therapy for an individual with chronic upper extremity spasticity after stroke pp1387-1397.

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 Israel J et al Metabolic costs and muscle activity patterns during robotic and therapist assisted treadmill walking in individuals with incomplete spinal cord injury pp1466-1478.

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• Schenkman M et al An integrated framework for decision making in neurologic physical therapist practice pp1681-1702.

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• Harris J et al Paretic upper limb strength best explains arm activity in people with stroke pp88-97.

• Pohl P et al Task switching after stroke pp66-73.

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 Fritz S et al Participant perception of recovery as criterion to establish importance of improvement for constraint induced movement therapy outcome measures: a preliminary study pp170-178.

### PHYSIOTHERAPY RESEARCH INTERNATIONAL Vol 11, No 2

• Smedal T et al Balance and gait improved in patients with MS after physiotherapy based on the Bobath concept pp 104-116.

• Suddick K et al Therapists experiences and perceptions of teamwork in neurological rehabilitation: reasoning behind the team approach, structure and composition of the team and teamworking processes pp72-83.

### Vol 11, No 2

• Turnbull G Changes in gait and symptoms after bilateral pallidotomy: a client with Parkinsons Disease pp 173-179.

### Vol 11, No 4

 Kuys S et al Routine physiotherapy does not induce a cardiorespiratory training effect post stroke, regardless of walking ability pp219-227.

 Langhammer B et al Covariation of tests commonly used in stroke rehabilitation pp228-234.

• Ramdharry G Physiotherapy cuts the dose of botulinum toxin pp117-122.

### PHYSIOTHERAPY THEORY AND PRACTICE Vol 22, No 4

 Love J et al Community use of a push rim activated power-assisted wheelchair by an individual with fascioscapulohumeral muscular dystrophy pp207-218.

Michelle Meade PT

### FOCUS ON Graduate diploma in neurological rehabilitation

### The University of Western Australia

The Graduate Diploma in Neurological Rehabilitation at The University of Western Australia (UWA) is an attractive opportunity for physiotherapists with a special interest in adult neurology to develop their clinical skills and related biochemical and neuroscience knowledge in the area of assessment and rehabilitation of adults with acquired neurological disorders. I was attracted to this course as it is conducive to those who wish to keep working full-time and study externally before attending the four week intensive on-campus semester. I'm a UK-trained physiotherapist with a variety of clinical experience and a special interest in the treatment of adults with acquired neurological disorders. I currently work at Royal Perth Hospital, in Perth, Western Australia.

The course offers a broad range of training including anatomy reviews with wet lab sessions, hands on practical skills sessions, clinical case studies and the opportunity to liaise with multidisciplinary neurological rehabilitation specialists. It was also a chance to remain up-to-date with the current literature in this field. The on-campus units were a great opportunity to meet and work with international physiotherapists experienced in the field of neurological rehabilitation.

The programme co-ordinator, Dr Barby Singer PT PhD is a senior lecturer at the Centre for Musculoskeletal Studies and has an extensive background in neurological physiotherapy. She offered ample support and feedback throughout the external and on-campus components of the course, as well as providing food for thought at her lectures and with assignment feedback.

The external units are carried out by distance learning with comprehensive course handbooks provided. There are ten assignments to each external unit; based on clinically relevant theoretical knowledge of the secondary consequences of adult onset nervous system disorders and neural plasticity.

The intense on-campus semester requires full-time attendance at UWA in Perth. During this one-month period there are full days of lectures, wet lab anatomy sessions and practical sessions. The clinical units covered topics including assessment tools such as neurodiagnostic imaging (CT, PET, fMRI, TMS), realtime ultrasound and neuro-optometry as well as strategies to manage common adult onset neurological diseases/disorders and conditions such as oro-motor dysfunction, balance dysfunction, spatio-perceptual



The 2006 GDNR class group photographed at the University of WA looking towards Perth city across the Swan River. From left to right - rear: Stephanie Parkinson, Shannon Williams, Robert Terkely, Emma Kennedy, Cameron Lindsay, Margi Faulkner. Front: Barby Singer, Tanya Fritchley, Xin Yi Soh, Denise Hall, Claire Noonan, Kathryn Greer, Michelle Meade.

dysfunction affecting movement and spasticity/focal overactivity. There were presentations from over 40 guest lecturers including Professor Graeme Hankey, editor of the internationally renowned journal *Stroke*. In addition there were a range of visits to specialist units eg Parkinson's Rehabilitation Unit and a Movement Disorder clinic. There are also group sessions where the quality of available evidence for certain rehabilitation strategies was discussed, as well as the role of clinical guidelines and approaches to neurological rehabilitation. There is no adherence to a particular neurological approach; instead most schools of thought are discussed and related to sound clinical reasoning and assessment skills as well as the current literature. Assessment is by case-study presentations and a written paper.

The on-campus teaching venue is in an idyllic setting with views of Matilda Bay on the Swan River. There is also ample opportunity to experience the other delights that Western Australia has to offer, such as the wine region Margaret River and the gorgeous beaches only ten minutes drive from the university.

This course provided me with intensive skills training where colleagues with different practices and the current literature challenged my views and long held beliefs. This post-graduate diploma covered a wide range of theoretical and practical topics that reviewed the efficacy and cost-effectiveness of current neurological rehabilitation practices and it has greatly changed my day-to-day practice as a physiotherapist.

The UWA Graduate Diploma in Neurological Rehabilitation external units are completed over two semesters prior to attending the residency semester which is offered once a year in August.









For further information, please visit www.cms.uwa.edu.au or email info@cms.uwa.edu.au

### **ACPIN** news

### ACPIN AGM 2007

24th March 2007 Hilton Hotel , Sheffield

### MINUTES

Opened at 11.45

### 1. Present

Ros Cox Mary Cramp Louise Dunthorne Emma Forbes Nicola Hancock Siobhan MacAuley Sue Mawson Jackie Sharp Jo Tuckey Julia Williamson

### 2. Apologies

Louise Gilbert Sandy Chambers Cherry Kilbride Sheila Lennon Linzie Bassatt Louise Rogerson

### 3. Minutes of AGM 2006

Accepted as an accurate record of events Proposed – Mary Cramp Seconded – Louise Dunthorne

### 4. President's address

Sue Mawson

5. Chair's address Nicola Hancock

### 6. Treasure's report

Jackie Sharp Accountants voted in by majority vote

### 7. Election of re-standing Executive Committee Members

- Louise Gilbert CIG Liaison Representative majority vote
- Jo Tuckey Honorary Membership Secretary majority vote
- Louise Dunthorne Synapse Co-ordinator majority vote

### 8. Election of new officers

- Ros Cox Diversity Officer majority vote
- Jo Kileff Honorary Treasurer majority vote

- Anne Rodgers Honorary Secretary majority vote
- Julia Williamson Honorary Research Officer majority vote

### 9. Election of new committee member

Sandy Chambers was voted in by a unanimous decision

### 10. AOB

Meeting was closed at 12.15

### PRESIDENT'S ADDRESS

Sue Mawson MCSP BSc (Hons) PhD

Some of you may be aware that I have become a media icon recently having been reported in the local news, the BBC and countless papers in the UK following a university press release with the strap 'Robot Physiotherapist reduces waiting time!' With great anxiety as this was not of my doing or my wish, I spoke to numerous reporters about my research whilst thinking in my head 'what will my ACPIN colleagues think!' and 'they will shoot me at dawn!' How did this sorry state of affairs come about you may ask.

Three years ago I became a partner on a Department of Health funded project entitled NEXOS; an intelligent exoskeleton for the rehabilitation of lower limb function following spinal cord injury. This was an exciting £227,000 study involving mechatronics engineers from Abertay University, and medical physicists, scientists and rehabilitation specialists from the University of Sheffield. Perhaps one of the greatest challenges of the work was keeping the engineers in the real world of patient's needs, the home environment, design specifications and therapist's views. In order to achieve this objective I arranged for my colleagues to spend time with spinal injury patients on our unit here in Sheffield and we engaged with user groups, patients and therapists in hospitals and the community from the outset with focus groups and semi structured interviews.

Whilst we had some successes there were still times during the three years when I found it hard to suppress my surprise and concern as the 'robot' evolved. The first event occurred in year one when we were invited to Dundee for a research partner meeting and led into the laboratory to view, with great expectation from the engineers, the first prototype. As I entered I heard a strange and loud hissing noise and when questioned I was told that this was the pump required to work the pneumatic arm of the 'robot'! You can imagine my vision of this a humming monster in the bedroom of a young person with a spinal injury, our engineer colleagues were dumbfounded at my concerns and I have to say this was never resolved, in their defence I should have known that a robot needed powering! The second amusement came with the second prototype. This was being bought to Sheffield for us to trial and test with physiotherapists in a clinic environment. My colleagues requested a parking permit and I watched from my office window as a large white ford transit van arrived from Dundee! You can imagine my amusement thinking of a community physiotherapist trying to fit the exoskeleton into his or her usually small car, pump and all.

However I must at this point speak about the success of this project. It was what we call a 'proof of concept' study to demonstrate that an intelligent system could provide a range of motions, speeds, and resistance of lower limb movements. We successfully developed this intelligent system, which could learn the movement from a physiotherapist, and we also developed the software to enable the remote rehabilitation of the patient monitored through the internet by a clinician located at a distance from the patients home.

During the last three years I have also been a partner on a larger research study, the SMART project, in which we have used sensor technology to remotely rehabilitate upper limb function in people who have had a stroke. This project which again has been user driven with stroke patients and therapists involved in both the design and the testing of the system has resulted in our collaboration with Philips research department in Auchan. Philips had independently been developing a similar system in the Netherlands approaching us last year with the suggestion of a fusion of systems and the possibility of running the clinical trails in the UK. This is an exciting venture that has again evolved over the past three years with therapists initial anxieties of loss of control being replaced by excitement and vision for how this type of system could be used to motivate and enable people who have had a stroke to self manage their own rehabilitation process.

Continuing on the theme of technology innovations did anyone, like me see the launch of the new Nintendo game the Wii and think of the possibilities of turning it into Wiihab!! Last year Dr Jane Burridge and I were awarded a £572,000 grant together with designers, scientists and

computer games specialists from a number of Universities to develop a system that incorporates sensor technology with gaming to motivate the rehabilitation of upper limb function post stroke. The vision of this study is not only to motivate activity and mobility but also to enable patients to engage with their extended family and home environment or community environment through games and web cam. At our first research meeting at Nottingham University the Virtual Reality research department had already stripped out the Wii trying to establish whether both the game and the sensors could be used for our project. Again we need caution, neurological rehabilitation is complex as are the needs of our patient groups however there will be aspects of this technology than can be used and indeed should be used as part of our management process.

Perhaps herein lies the nub of the debate. The technology is with us, mobile phones, GPS, minute wireless movement sensors, can we use this technology to augment rehabilitations and recovery? Can we use these technologies to motivate people to continue undertaking repetitive activities over long periods of time? Can we use these technologies to enable therapist to remotely observe activities? Can we use these technologies to enable people to gain autonomy and control, to decide when and where they do their rehabilitation? These are all exciting questions than can only be answered if firstly we work with our user and carer groups from the beginning, and secondly if we work as multidisciplinary research teams with designers, scientists and therapists to harness these innovations to enhance the rehabilitation process.

An inevitable aspect of this debate has to be around the changing face of the NHS. With continued funding cuts resulting in reduced length of stay, fewer community rehabilitation specialists and the postcode lottery that this produces we need to consider whether using information and communication technologies can lengthen the rehabilitation period providing self-managed but therapist governed interventions. This reduction in face to face contact following discharge could be a cost effective way of providing more rehabilitation therapy to more people monitored remotely by the specialist.

My foray into the world of the mass media culminated in an article in the Times supplement *Body and Soul* a few weeks ago where I was able to make it quite clear that 'robots therapists' would never replace the knowledge, expertise and face to face interaction of the physiotherapist. However with the changing face of the NHS we must look towards innovations in technology to enhance rehabilitation removing barriers to technological developments and working with scientist in a very brave new world.

### CHAIR'S ADDRESS Nicola Hancock MCSP BSc (Hons)

Welcome to the AGM, as part of the ACPIN National Conference for 2007, 'Challenging Balance', and I hope you have had an enjoyable morning so far. I am very aware that the Chair's address can be something of a 'dry' moment in the day's programme, but it is good to have the opportunity to inform you, as ACPIN members, of the work that the committee has done this year on your behalf and of what is planned for 2007/2008. I am grateful to you all for lending me your ears for a few minutes more and perhaps you will be a little more tolerant if I inform you that this is my penultimate address as I am about to serve my final year as your Chair.

As Chair since 2004, I have seen one of my key roles as a facilitator of links between ACPIN and other groups, for clinical and research purposes and for raising profile with not only CSP groups but those in the wider neurological community. Some success in this aim was borne out as I reviewed my communications for the year when preparing this address. I would therefore like to acknowledge the following members as an example of the projects we are a part of: Professor Ann Ashburn in representing us on the UK Stroke Forum, an increasingly prestigious organisation, Rhoda Allison for her representation on the working party for the forthcoming NICE Acute Stroke Guidelines and Dr Shelia Lennon for her work alongside ACPIN on the Royal College of Physicians Inter-Collegiate Stroke Working Party. From the committee itself, Mary Cramp (more of her later!) for her work on the Physiotherapy Research Network, Louise Gilbert for some stalwart years now on the CIG Liaison Committee and Jo Tuckey and Siobhan Macauley for their input into the CSP Congress team.

On the subject of Congress, we enjoyed a very successful programme in 2006, it was just unfortunate that we were only hosting for one day. Our speakers were focused on 'Managing Long Term Conditions' and the afternoon session was reminiscent of programmes before financial squeezing on CPD budgets was so evident- we sadly had to turn some people away at the door as our hall was full. I suppose that is much more favourable than that which keeps all good Chairs awake at night – the thought of an eminent speaker standing up and tumble weed blowing across an empty conference venue!

Having skipped this year for re-organisation, the CSP are re-launching the event in Manchester in October 2008 and we are already in the planning stages of our programme, although topics are by no means finalised. We have decided not to host a specific ACPIN event this autumn but hope to play a larger part in the second UK Stroke Forum event in Harrogate this December. This also allows us a little more flexibility in our timeframes for organising Congress and next year's conference.

Annual Representatives Conference (ARC) has proved disappointing for us, in that none of the three ACPIN motions submitted were accepted for debate. Members have also expressed some concern over the lack of clinical motions in general and that clinical issues may be being sidelined and we wondered if this is why we had no offers of members to represent us, for the first time. We hope to hold some talks with the CSP about this issue and would welcome your thoughts.

Interactive CSP continues to evolve, with everincreasing numbers of registrants to the Neurology network. Chris Manning is now our lead moderator and attends ACPIN Executive Meetings in order to ensure that the system works for both the committees and their members. Our next goal is to have protected committee 'areas' on the site, where the Executive and Regional groups could share minutes, ideas and notes from conferences etc. The network relies on input from site users and I know that Chris welcomes your input. You can make comments via Emma Forbes, our PRO, as she is linking with Chris on these details. Her email address is on the ACPIN website. The website itself is now much more user-friendly and has undergone a real facelift this year, both in terms of its appearance and regularity of updates (www.acpin.net)

Synapse also provides an excellent forum for sharing good practice and reporting on audits, pilot studies, clinical case studies and research reports. Louise Dunthorne does an amazing job in pulling it all together, but unsurprisingly cannot do so if she doesn't receive material – so please do consider whether there is anything you or your colleagues would like to write up for review by the team. Its really not that onerous and lots of support can be given in producing a suitable article.

Another topic that the membership has continued to raise this year is that of guidelines, and in particular the old ACPIN Splinting Document. The CSP have been working on a review programme for such documents, known as SKIPP – Supported Knowledge in Physiotherapy Practice, and are looking at different ways in which such evidence based tools could be compiled and used. Julia Williamson, in her new role as Research Officer, is going to be working with Ralph Hammond at the CSP to see whether the splinting document could provide a pilot tool for this scheme. We will keep you updated.

Membership and the ACPIN database has perhaps proved the biggest challenge of the yearour co-ordinator Diana Mees resigned in the autumn, and Jo Tuckey and Mary Cramp quite incredibly, and with no coercion (well, not much!), took on the job of processing your forms and completely re-thinking the database process. We now have 1,000 members, an excellent figure for the time of year, and Mary is going to continue to help us out with a five-year plan for modernising the payment and processing system. I think you will agree that the committee owe Jo and Mary an enormous debt of gratitude for this work, thank you both.

I am left now with just one final task – the thankyou's and farewells for 2006/7. My first thank-you is to our President, Dr Sue Mawson, for her unfailing support for ACPIN and her constant enthusiasm and ideas on developing our group. I am delighted that Sue is happy to continue in her role.

Mary Cramp's decision to depart from her role as Honorary Research Officer, and from the Executive Committee as a whole, is a sad one for not only the Executive and National Committees but the wider National group. Her quiet, calm manner, coupled with her vast research knowledge, will be much missed and on behalf of you all I would like to acknowledge her work and thank Mary most sincerely.

Cherry Kilbride and Jackie Sharp are both stepping down from honorary posts, those of secretary and treasurer respectively, and whilst I thank them both for their incredible dedication, it is not quite farewell yet as both will be staying for a final year as committee members. You should note the level of Jackie's dedication when she stands to give her Treasuer's address – that baby is due to emerge in two weeks and still she insisted on coming.

Finally, thanks to all of you – as a clinician and team leader, I am only too aware of squeezed resources and the increasing difficulty in accessing funding for CPD opportunities such as this. It is not surprising to us that from the evidence of your application forms for today, the vast majority included a personal cheque, and not a trust payment, for your attendance and I am quite sure none of you are claiming a day in lieu at work next week for this Spring Saturday. I only hope that my address has given you some idea of what we are doing on your behalf, and that you think that the investment you have all made, both in your ACPIN membership and your course fees today, was worth it!

Thank you for listening

#### TREASURER'S REPORT Jackie Sharp

I will now present a summary of the financial accounts for National ACPIN for the year end 31st December 2006

This year the accounts show both increases in the total income and the total expenditure for 2006 compared to 2005.

The total income (*Figure 1*) was £72,903, an increase of just over £24,000. There was a greater income gained from conferences because we held a two day residential conference in March 2006 compared to the smaller one day event held in 2005. An increase in the membership led to more membership income and capitation from the CSP and there was an increase in income gained from the sale of advertising space in *Synapse* and selling the database. Sale of the *Manual Handling Guidelines* was discontinued.

Expenditure (*Figure 2*) for 2006 was up by £10,611 compared to 2005. This was primarily due to the increase in course expenditure with small increases in the cost of producing and distributing *Synapse* and in capitation fees to the regions. A research bursary of £488 was awarded.

Administration costs have remained stable this year and there has been a slight reduction in travelling expenses.

The website has cost less to update this year due to a change in the way we are managing the site. Monthly updates have now started and this will result in a yearly expenditure of  $\pounds1,400$  from 2007.

New expenses for 2006 arose from the UK Stroke Forum. ACPIN have a representative on this forum and funded two committee members to attend the annual conference with a view to holding programmes at this event in future years.

Figure 3 divides the course income and expenditure up between the two conferences that ACPIN hold a year.

ACPIN conferences have been successfully brought in on budget for the last three years with a deliberate profit made in 2004 to increase the ACPIN reserves. This year the two day residential conference, our silver jubilee, was projected to make

INCOME		
	2006	2005
	£	£
Course fees	35,927	13,634
Membership	32,687	31,175
Capitation	2,536	2,490
Manual Handling	0	146
Synapse	420	220
Database	310	168
Bank interest	1,023	831
Total	72,903	48,664

Figure 1

EXPENDITURE 2006 2005 £ £ 28,053 16,484 Courses 8,128 7,982 Synapse 6,248 7,001 Travel 6,793 6,914 Administration 5,288 5,060 Capitation Website 589 1,316 Research bursary 488 (179) UK Stroke Forum/ Stroke Guidelines 580 1,067 Accountants, bank charges, and sundries 1,543 1,454 57,710 47,099 Total Figure 2

COURSE INCOME AND EXPENDITURE				
2006	Income £	Expenditure £		
March Silver Jubilee				
Stroke	33,917	24,384		
October				
CSP Congress	2,010	3,669		
Figure 3				

### BALANCE SHEET AT 31 DECEMBER 2006

# £ Reserves brought forward 36,625 Surplus/(deficit) 15,193 Reserves carried forward 51,818 Figure 4 51,818

a profit if maximally attended but made an unexpected £9,500. This was due to a number of reasons that we could not anticipate. They included a refund from the venue following a heating failure, a higher than expected number of non-ACPIN members attending and a larger than expected number of people attending as day delegates rather than residential delegates. Both the non-ACPIN members and day delegates paid a higher attendance rate. Some of this money has been used to subsidise today's conference by keeping the delegate rates down and the remainder will be used to subsidise future conferences and in particular, funding international speakers for Congress and our next residential conference in 2008.

At the CSP congress, ACPIN made a loss of £1,659. As I have reported before, this is a difficult conference for ACPIN to budget for as we rely on an income determined by the CSP. This loss was considerably less than last year because the ACPIN programme was a one day event rather than two but, despite excellent attendance throughout our programme, we still cannot break even at this event. The CSP have been made aware of this by ACPIN.

The balance sheet (*Figure 4*) on the 31 st December 2006 showed a profit of £15,193 and we were able to carry forward reserves of £51,818 into 2007.

#### **Copies of Accounts 2006**

Full copies of the ACPIN accounts are available on request

#### **Vote for Accountants**

Vote to retain the current accountants for 2007: Langers, 8-10 Gatley Road, Cheadle, Cheshire, SK8 1PY

### **DELEGATE'S REPORT**

Cathy Kelly-Jones Clinical specialist in neurology and Chair of Kent ACPIN

This year's conference and AGM was an excellent and exhilarating event which was put together by the committed and professional team of the National ACPIN Committee. They have to be commended for seeking out the most eminent and expert speakers in the country (and Ireland), to present on this fascinating subject of 'Challenging Balance'.

Dr Jon Marsden MCSP PhD (researcher at the Sensorymotor Rehabilitation Group at the Institute of Neurology, London), presented the first lecture of the day. He described the difficulties of balance in bipedal stance in humans. His graphic slides depicted an inverted pendulum to explain postural sway, with the ankles being the fulcrum and the Centre of mass being raised and larger than our base of support making the pendulum sway. The CoM is also anterior to the ankles and requires a stiff spring like tension in the calf muscles to stop us falling forwards. The stiffness is modulated by multisensory control mechanisms from higher up in the nervous system which might explain the excessive stiffness in calf muscles which are often a dominant feature in the hemi-paretic limb of stroke victims. Jon also emphasised the importance of the predictive feedforward control used in balance. This is demonstrated in the broken escalator phenomenon where you stumble forward when you step onto a stopped moving escalator. The picture of researchers observing thousands of control subjects loosing their balance in experiments using sliding platform and escalators will stay with me always.

The second lecture was presented by another eminent and eloquent speaker from Ireland called David Fitzgerald MCSP Dip Eng Grad Dip Manip Ther.

Here is a man who has grasped all the theories and concepts of core stability from experience and the literature, shook them all about and spat them all out. He is not a fan of the neutral spine as no one walks around or moves with a neutral spine. He is not a fan of specific training of the transverse abdominals and he does not believe that the rectus abdominals are the 'bad boys' in training core stability. I quote from one of his slides on the topic of core stability and CNS dysfunction: 'Core Stability is evolving to a universal panacea distorting clinical focus on multi-factorial analysis-a dumping ground for the non analytical clinician.' He recognises that in CNS damaged patients there is no point in trying to be too cognitively specific about trunk stability. The concept of a cylinder within the trunk was described with the spinal column being supported by inter abdominal pressure by muscles attached to the thoraco-lumbar facia and the diaphragm above and pelvic floor below being important in keeping everything together in order to achieve postural control and core stability. He also mentioned the sling muscles which are important for movement control and the rectus abdominals being important in gait at terminal stance when they are very active in order to achieve function to bring the leg through in swing phase. He was very adamant that all core stability training should be carried through in a functional way ie facilitating the abdominals and gluts during walking in the CNS impaired patient (not too alien a concept in neuro-physiotherapy).

The following three speakers were equally specialised in their contribution to the balance topic. Professor Alan Wing described how the use of light touch aids static and dynamic balance. This was using the experimental model in a lab setting with the use of a rod touching the shoulder and knee of the model in stance and walking. Fascinating work that can be done in a lab setting to aid our evidence based practice.

Dr Emma Stack MCSP PhD Msc in Gerontology and Senior Research Fellow in fall related activities presented a fun filled full of common sense lecture on 'Facilitating autonomyself-management and exercise in balance disorders'.

The talk focused on Parkinson's Disease and the fallers. She stressed not trying to teach balance reactions to these patients as they have little chance of improving them due to their lack of basal ganglia function. It was more practical to protect them from injury when falling eg using hip protectors, a safer environment and keep them fit. She advised teaching cueing for gait festination and teaching strategies for turning, getting in/out of bed and on/off the floor and turning the head to get aroud objects. Using visual, auditory and tactile cues can help their function enormously. Keeping fit will help maintain muscle compliance and prevent them going down the slippery slope to immobility so fast. Her last slide with a therapist with her feet up said it all. The techniques are simple. The skill of the therapist lies in firstly, assessment and secondly, teaching.

The final speaker of the day was Dr Marusa Pavlou from Kings College Hospital London. Her presentation was titled 'Innovative treatment approaches for complex balance disorders'.

This was an update on the current approaches to vestibular balance disorders and vestibular rehabilitation. The use of technology in treating visually dominant vertigo was discussed with the virtual reality approach with a simulator used to encourage habituation and expose the client to visual stimulation to adapt to their environment. Rather than a series of Cawthorne Cooksie exercises given to the patient to take away and practice, a customised set of exercises were given for the patient to practice which might include video games or a DVD with lots of visual lines of moving spots to cope with. The treatment of customised exercises for habituation is useful in peripheral vestibular disorders and not so successful for central vestibular disorders. It was interesting in seeing how technology is becoming a useful tool in some treatment approaches.

To conclude this was a very educational and useful clinical day. The venue was very comfortable, we were well fed and watered for the day and all our needs were looked after by the co-ordinated efforts of our wonderful ACPIN committee. A well worth it value for money event.

### **ACPIN EVENTS 2007**

2007 started very well with a one day Conference and AGM held at a new ACPIN venue, The Sheffield Hilton. The conference was entitled 'Challenging Balance' and had several exciting speakers talking on a wide range of topics: physiology, core stability, measurements, self management and innovative treatments.

The CSP has decided not to hold Congress this year in order to allow time and a re-think on Congress 2008. Last year many ACPIN members attended the UK Stroke Forum held in Harrogate and the feedback from it was excellent. After much discussion, the Executive Committee have decided not to run an ACPIN autumn conference this year, influenced largely by lower numbers attending recent events, perhaps due to restrictions on CPD funding. It is also hoped that ACPIN members will represent us in plentiful numbers at the UK Stroke Forum, December 2007, at which we hope to involve ourselves with a relevant plenary session.

We are meeting to start organising conferences for 2008 and the programme at Congress in October 2008. The ACPIN Committee always welcomes suggestions for future conference topics and speakers. If you have any thoughts and ideas please get in touch with a member of the executive committee.

All National ACPIN Conferences are advertised in *Frontline* and on the website at www.acpin.net

### **COMMUNICATION SUB GROUP**

Emma Forbes PRO Communication Sub-Group

The regional representatives pack has again been updated by Julia Williamson. This is in response to the need to update the section on organising courses. This also shows that the representative's pack is a working document which aids the reps to carry out their role. Thank you Julia.

A certificate template is in the process of being developed by Jo Kileff which is to be added to the pack. Again the aim is for these to be used by the regions following study evenings/days and to aid our membership develop their portfolios.

Again with regards to CPD a period of reflection following study session has also been suggested and documentation to support this may also be developed to be contained in the pack. be held in Oxford on 1st and 2nd of March. We re-submitted all four motions from last year but unfortunately did not get any accepted. We therefore have nobody representing us at ARC this year. On discussion with the communication group we felt that with it taking place just a few weeks prior to our own AGM the latter must take priority.

It has been decided that for next year's ARC we will concentrate on one motion giving us more time to develop the submission and hopefully it will be successful. Thank you to the group for your hard work to develop the motions.

On behalf of the communication group Emma Proctor has been arranging exhibitors for the Balance Conference in March.

And finally Jill Fisher represented ACPIN at the Student conference in Leeds by running two interactive workshops on Neurology.

ARC is going ahead in 2007. It is to

### **RESEARCH SUBGROUP REPORT**

The aims of the research subgroup are to:

- provide support for ACPIN national committee and liaise with the CSP and external agencies on researchrelated issues
- promote and support research activity within the membership
- advance understanding of aspects of research among the membership

Many of our tasks are regular and ongoing. After a break in the last issue, *Research Forum* is back in this issue and we are focusing on qualitative research. If there are other issues you would like to see featured in *Research Forum*, do let us know. Communicating research is vital part of the research process but it is often difficult to get started. However, Synapse welcomes research articles and if you want to engage in dialogue with fellow physiotherapists, poster presentations are also welcome at ACPIN conferences. If you are planning to conduct some research, the ACPIN Research Bursary is still running and available to members. The value of the bursary is £800 and this sum can be used to cover research expenses. The next deadline is 1st June 2007. Further details can be obtained from the ACPIN website (www.acpin.net)

### UK STROKE FORUM DELEGATE REPORT

Christmas lights in Harrogate greeted around two thousand delegates to the International Conference Centre for the first UK Stroke Forum Conference. The first day began with a welcome and plenary sessions on the work of the UK Stroke Research Network and the translation of good research into good practice. Whilst the medical model was very much to the fore, Professor Pam Enderby redressed the balance for the Allied Health Professionals, exploring the challenges of research into impairment, function and psychosocial factors.

Coffee and lunch were taken whilst being bombarded with information from poster presentations! An ideas fair allowed delegates to trial various FES devices, see virtual reality rehabilitation in action and even have their carotid dopplers checked! The afternoon was divided into a variety of 'parallel sessions', allowing delegates to choose the most appropriate lectures. 'Effective community-based rehabilitation' drew many from the physiotherapy sector, with 'Support for improving clinical practice and palliative care' proving equally popular.

Dr Sheila Lennon presented a pilot study of a profession specific audit of stroke care, taken from work by the Intercollegiate Working Party for Stroke (IWPS). This pilot audit highlighted the variable use of goal setting and outcome measures and the poor information provision for families and carers by physiotherapists. The audit tool is to be revised and made available via the IWPS. The afternoon was completed by further parallel sessions on long term support in the community, cognitive and visual problems.

The evening was devoted to getting into our 'glad rags' and heading to the Majestic Hotel for the gala dinner! The wine flowed, the laughter rang out and the dancing to the fantastic jazz band was something to behold!

Friday morning began with a strong coffee (!) and a lecture on the future of acute stroke care. The top five research presentations followed, including information on cortical activation maps of motor imagery after stroke. A parallel session followed with a choice of focus on early supported discharge or recovery. The latter held most interest to the clinical physiotherapists, with Professor Ann Ashburn stimulating thought on the risk of falls in stroke. Dr Alan Sutherland continued this session with discussion on the process of recovery and adaptation after stroke. The afternoon session explored the development of the National Stroke Strategy and innovations in stroke care.

The masses of delegates flowed out of the Harrogate Conference Centre to trains and planes taking them to homes all over the UK. On discussion with colleagues the conference was felt to focus on a medical model of care, with service delivery discussion taking priority. The clinical research was noted to be of variable quality. However, the achievement and future potential of getting two thousand delegates into one venue, to discuss the future of stroke, cannot be underestimated. Physiotherapists played an active and vocal part in this. I personally can't wait for the 2007 conference, it will be an amazing two days for improving knowledge, stimulating thought and promoting team working in stroke care.

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### **Research forum**

In Research Forum this time, we are focusing on qualitative research. While facts and figures have dominated our view and experiences of research, there is growing interest in qualitative research. I would like to thank our four contributors, Graham Copnell, Louise Gilbert, Siobhan Mac Auley and Cherry Kilbride for sharing their experience with us. With greater emphasis on patient involvement in research and research for patient benefit, being familiar with multi-modal/mixed method approaches to research will enable us to best utilise the available evidence.

### INTRODUCTION TO QUALITATIVE RESEARCH

There has been an increasing interest in qualitative research methods by both practitioners and health policy makers alike (Pope and Mays 2000). The acceptance of qualitative methodology and the results from such studies as contributing to 'evidence-based practice' is a relatively new phenomenon. Those with an interest in gualitative research see this as a positive move but a degree of caution should be applied to anyone accepting such evidence without applying the same degree of critical evaluation as one would apply to quantitative methods. The purpose of this short piece is to offer a very brief introduction to the many and varied methodologies which go under the banner of qualitative research. It is not an exhaustive resource; rather it intends to offer the reader a brief introduction and a base from which to begin to evaluate qualitative research

### Commonalities across qualitative research approaches

At a simplistic level, qualitative research is concerned with the *discovery of meanings* (Taylor and Bogdan 1984). I say simplistic because this is an often overlooked feature, but one which goes a long way in helping to understand the difference between the different schools of thought. We see, interpret and experience the world in terms of meanings (Haralambos 1980). A major concern of qualitative enquiry is therefore an understanding of these meanings. Hodge and Kress (1988) have suggested

'...it is through language, symbols and ways of expression that the investigator comes to understand and derive meaning within each context'.

The focus of qualitative investigation is on the interpreted experiences of individuals or groups. Some qualitative perspectives view meaning as a truly individual concept, the outcome being that we can never truly understand until we have experienced. Others see meaning as something that is created, the creation of meaning being an active process between individuals. The world is viewed in a pluralistic manner in that what is true for one individual or group may not be true for another individual or group. Humans are seen as having a consciousness and thus cannot be reduced to component parts in order to be studied and our world(s), our realities, are created, they are singular and unfolding.

A difference in what constitutes reality, individual or shared, and how we become aware of this is often described using the terms ontology and epistemology. Ontology is the theory of reality (shared or individual, external or internal), the theory of meaning. Epistemology is the theory of how knowledge is created ie its' sources (through reason, through experience, through shared endeavour). These fundamental philosophical conceptions shape the foundations for the different schools of thought and research perspectives in qualitative research (Depoy and Gitlin 2005).

### Qualitative perspectives and schools of thought

Although there are similarities across the different perspectives and schools of thought, the epistemological and ontological foundations on which they are built will impact on their primary research focus (ie the types of questions they ask) and consequently the methods employed to answer them. *Table 1* provides a very brief summary of the main approaches used in health care research. The text in italics is there to indicate to the reader the main points of difference.

### Using qualitative research

As a researcher or consumer of research, it is important to understand these philosophical and methodological principles to evaluate the quality of a product. The nature of qualitative research is one that allows the researcher the freedom to grow and develop as the research unfolds, it is individual, reflexive, evolutionary and context specific. Thus, there is some debate amongst qualitative researchers as to whether guidelines or check lists such as those used to evaluate quantitative research can be applied to qualitative research as the very nature of qualitative research should be free from external guidelines. 'Thinking qualitatively means rejecting the idea of a research design as a single document which is an entire advance blueprint for a piece of research. It also means rejecting the idea of a priori strategic and design decisions or that such decisions can and should be made at the beginning of the research process' (Mason 2002, p24).

However, some qualitative researchers suggest that such

guidelines can and should be applied (see Patterson et al 2001).

Regardless of whether guidelines should or should not be developed, one thing most qualitative researchers are in agreement about is that in any form of qualitative enquiry what is required is philosophical and methodological coherence. In contrast to quantitative research where the emphasis is on the method eg RCT or cohort design, in qualitative research the focus is on methodology as it shapes which methods are selected and how they are used. When we talk about methods in qualitative research, the concern is more with the analytical and interpretative approach being adopted rather than a set of procedures being employed. One of the main reasons for this is that the same methods of generating data are shared by different schools of thought and theoretical perspectives. What differs is the guestions these schools ask and therefore the answers they generate. As a simplified example, both ethnography and phenomenology may use participant observation and field work as methods for generating qualitative data, analysis could involve coding and recording for future use of this data in order to generate themes. What will differ is that ethnographers are concerned with culture, the shared patterns, meanings or beliefs of a group of people, where as a phenomenologists primary focus are the essence of a particular experience for an individual. Although the same methods are employed, what counts as data and how this is interpreted will differ.

Rigor in qualitative research is a topic which has generated much thought over the past few years and a number of structures have been suggested in order to ensure the reader of the quality of qualitative research. When compared to quantitative research studies using a qualitative methodology are often found lacking with regards to validity

RESEARCH APPROACH	PRIMARY FOCUS	MAIN DATA GENERATION METHODS	RESEARCHER INVOLVEMENT
Phenomenology	The essence of an experience for an individual or group. The only person to truly understand phenomena is the one who has experienced it	Participant observation, field work, interviews.	Reporter, detachment in analysis aiming to accurately describe the experience of the individual.
Ethnography	Shared meanings, behaviours, the culture of a group or sub-group. Cultures are constructed and shared through interactions.	Participant observation, field work, interviews.	Aiming to interpret data from a cultural perspective.
Heuristic	The essence of an experience for both the participants and the researcher. The only person to truly understand a phenomena is the one who has experienced it ie <i>the</i> <i>researcher</i> .	Participant observation, complete immersion into the field.	High level of personal discovery from the researcher's perspective.
Ethnomethodology	The everyday, common sense, the norms of a particular social group. Knowledge is constructed and shared through interactions.	In-depth interviews, participant observation.	Aiming to interpret data from a cultural perspective, may directly interfere with situation to elicit reactions.
Grounded theory	Analysis, the aim being to generate concepts, constructs and theory. No epistemological alignment focus being on methodology.	No 'fixed forms'. The focus is on methodological features such as constant comparison, coding paradigm and conceptual density.	Analysis occurring throughout data collection. The research process is directed by the researcher.

#### Table 1

and reliability. However, as suggested by Agar (1986) the terms reliability and validity are not entirely applicable to qualitative research because such enquiry by its very nature is interpretative. Agar (1986) has suggested that a different language is required for qualitative enquiry that shifts the emphasis on to the researcher and the subjects. Criteria such as credibility, accuracy of representation and authority of the writer have been introduced. Similarly Guba (1981) has developed a model for assessing the rigor in both quantitative and qualitative research based on four aspects of trustworthiness, these being truth value, applicability, consistency and neutrality. The first aspect termed truth value assesses 'whether the researcher has established confidence in the truth of the findings for the subjects or informants and the context in which the study was undertaken' (Krefting 191, p215). This term is comparable with internal validity. Applicability is concerned with the 'degree to which the findings can be applied to other contexts and settings' (Krefting 191, p216) or other populations. Although such generalisations may not be appropriate for some forms of qualitative research, it may be appropriate for other researchers to transfer findings from one study to another. 'Transferability' addresses the issue of external validity (Lincoln and Guba 1985). The question of reliability in qualitative research is addressed by the use of consistency of findings or, as Miles and Huberman (1994, p278) have suggested, the 'dependability of the study'. It is important that the researcher is open regarding methods and interpretations throughout the research process allowing others to view the mechanisms of the research path. The final term, neutrality, is concerned with the degree of 'objectiveness' of the study, asking to what degree the findings are due to those involved or the surroundings (Krefting 1991).

#### Conclusion

Qualitative research has, in the past, been regarded as secondary or inferior to quantitative research, often being perceived as 'woolly', imprecise or just confusing. In the light of evidence based practice and a patient centred NHS qualitative research is now being seen as a means of informing and expanding practice, bringing to the fore different perspectives and voices. The introduction of qualitative research into the way healthcare is delivered and perceived may help facilitate the development of an NHS which is truly patient centred. It is of equal importance for consumers of health related research to have an understanding of the quality of the product they wish to use; this applies equally to qualitative research as it does to quantitative research.

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### USING QUALITATIVE RESEARCH TO IMPROVE HEALTH SERVICES: AN EXAMPLE

Quantitative methods produce outcomes that are measurable and objective but a criticism is that it may be of unproven value or relevance to the patient/client (Whalley-Hammell 2001). Qualitative findings can be seen to complement results achieved through conventional methods (Green and Britten 1998). At policy level this type of research is seen to be important to improvements in local health services. Patient centred care is a key principle underpinning the NHS plan for developing modern services 'meeting the needs of individuals and involving the public as active participants in transforming local health services' (DoH 2000). This example reports on a project titled Patient as teachers project: learning from people who have had strokes. The project received local ethical committee approval, was funded by the Modernisation Initiative and was a joint project between Lambeth and Southwark, Lewisham and Greenwich PCT's.

It is recommended in the RCP guidelines for stroke that evaluation and planning of services should include opinions of patients and carers (RCP 2004). However there is little evidence so far in this area. The aim of the project was to improve practice in relation to treatment and care we provide as health professionals by developing agreed recommendations for good practice and patient centred care. The final 'product' consisted of a video/DVD and a good practice guide that could be used in education and training of health professionals.

The project used the 'patients as teachers model' which has been used successfully in primary care for cardiac, asthma, mental health services and assessment of older people across health and social care (Fisher and Gilbert 2001). This model provides patients with the opportunity to act as educators of professionals to highlight positive and negative aspects of the service they receive and to identify problems and solutions, thus directly influence change to the delivery of services and enhance its quality.

Forty-one people and their carers participated in the project and gave informed consent. A varied group of patients were recruited to reflect the diversity of patients in the boroughs and of stroke itself. A series of six focus groups were led by independent experienced facilitators who explored patients and carers experiences following stroke along the care pathway from initial onset, hospital care and on return to home and the community. Discussions were led by asking patients and carers 'what mattered?' and 'what has worked best for you?'. Sessions were filmed and written data collated, transcribed and analysed for key themes. The views and themes expressed were then fed back to the participants to ensure that they reflected their actual experiences and views thus ensuring validity to the results.

Since completion of the project the DVD and guide have been used locally in stroke study days and by the speech and language therapists in their training on the stroke unit. Feedback from health professionals is that it is an extremely useful and 'powerful' way of improving patient care, particularly in the aspects of communication with patients/carers. access to information and client centred discharge planning/coordination of care. The patients and carers who participated in the project were also very pleased with the final film. From this project, it became apparent that information and advice to parents of young children and to the children themselves of people following a stroke is lacking and a further project has been funded by the modernisation initiative to work on this aspect.

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### USING QUALITATIVE ANALYSIS TO ENHANCE RESEARCH: A PERSONAL PERSPECTIVE

Qualitative research has increased in popularity over the last few decades and there is now an emergence of multi-method approaches where the narrow confines of quantitative studies are augmented by the depth of qualitative studies. When undertaking my thesis to complete my MClinRes at the University of Ulster I decided to use both quantitative and qualitative analysis. The study was 'The effect of group exercise on balance and mobility in people with multiple sclerosis'. It was a pilot study to look at the feasibility of running a group programme, with the participants undertaking a circuit approach to exercise. The outcome measures used were 10m timed walk, Rivermead mobility and step test. These measures were chosen as they could be used quickly and easily replicated in the clinical setting. At the end of the four week programme a focus group was held. The focus group discussion was recorded, transcribed and analysed.

As a result of the focus group, we gained valuable information from the group. The timed walk did not show any clinical significant change. However, during the focus groups, changes were noted in mobility that were quite significant for the indvidual. A number of people felt much more confident in their walking ability. One individual had changed from using his stick to mobilising independently, another felt more confident and was now walking outside and as a result was participating in more social events. Another felt dressing was easier as he could stand to put on his trousers, as previously he had to sit on the bed. I

feel these important benefits would have been missed as our measurement tools were not sensitive enough to pick up these differences. This is just one of the examples of a theme that emerged from the focus group but the other themes emerging will be taken into consideration when developing the main study.

On a personal basis, I was initially unfamiliar with qualitative analysis and thought it was a bit 'waffly', as I tend to think in mathematical and statistical terms. However having now tried a form of qualitative analysis I feel it added a significant depth to my study and that it was an extremely valuable approach. It was far from 'waffly' as there is a rigorous method employed in this approach. I feel this quotation by Einstein is very fitting:

"Not everything that can be counted counts, and not everything that counts can be counted."

### A JOURNEY INTO THE UNKNOWN ... A LIGHT HEARTED BUT TRUE STORY OF DISCOVERY

I used to be a physiotherapist who lived in a world of black and white. I thought I knew where I was and what things meant. I was scientifically trained, I was a 'quantitative physiotherapist', adhering to the strict rules of dependent and independent variables, statistical significance, and keeping myself out of the research process at all costs (just in case I contaminated the results of course!). I was a physiotherapist who knew how to carefully measure and count in numbers; if something couldn't be measured I thought it couldn't be worth knowing about. If I didn't know the answer to something, then I just had to try harder because the truth was out there waiting to be discovered... I just had to look more carefully. Or perhaps it was because I wasn't clever enough to find it... I had no experience of the 'other side', of qualitative research and if I am

truthful, I was content with that.

Then, through a serendipitous moment I began a journey into the unknown... I began a PhD that used a mixed method approach or in other words 'it used words as well as numbers'! Suddenly my world of quantifiable safety was turned upside down. Early extracts from my personal journal (a written record of my feelings through the project) included:

"I feel like I am treading water, I don't feel like I am doing real research, I do not have to control everything... that is scary."

"I can't find a focus for all this, I am in a maze full of fog, and I can't find 'it', I feel out of control..."

I even queried if I was a 'proper' physiotherapist anymore, I felt like I was losing my identity. I heard words like 'reflexivity' and was sure it was something to do with a tendon response to stretch. Actually it was referring to a process where the researcher examines the effect of their self on the research process and how it could influence findings (but that was ok, it was allowed - that was very strange to me at that stage). I wanted to box everything (including myself), I wanted plans, and I wanted to know in advance what I was going to be doing, what the team was going to be doing, and what the patient would be expected to do. It was hard to accept that I could 'go with the flow', step back and let findings emerge from the field. It was hard at times to see that by monitoring the process of events occurring in the project field through meticulous and systematic keeping of participant observation field notes, through the monitoring and documentation of meetings, through analysis of official documents, through in-depth interviews, the use of focus groups and more familiar measuring tools like audit to measure outcomes of change over time (now that was more like it!) that I was doing research, or at least research in my limited experience of it. The systematic analysis of words instead of numbers was a completely new challenge and a tough one at that.

I am now nearing the end of writing up my PhD, and I can say without doubt that through my encounter with the world of various shades of black and white and even a world with many colours, I am a different physiotherapist (and one that I think is 'better') to the one that started out on this journey five years ago. I can think out of the box and I have an appreciation that there is more than one way to see things!

Qualitative research has much to

offer physiotherapy and whilst this insight has been written in the genre of light heartedness, I hope that by sharing some of my experience with others it may entice you to dip a toe into the 'world of words'. Go on, try it. It is an enlightening encounter and what's more you could make a valued contribution towards the evergrowing evidence base in physiotherapy.

### **Useful Web resources**

- www.policyhub.gov.uk/docs/ a\_quality\_framework.pdf
- www.phru.nhs.uk/casp/ critical\_appraisal\_tools.htm

# Ataxia Brunel

Contemporary physiotherapy practice for people with ataxia: the perspectives of clients and physiotherapists

### **VOLUNTEERS** REQUIRED

We are looking for physiotherapists to participate in focus groups with other physiotherapists about the content and delivery of physiotherapy for people with ataxia.

If you have two or more years experience in neurorehabilitation, some experience of treating people with ataxia and are interested in participating please contact **Elizabeth Cassidy**, Lecturer in Physiotherapy at Brunel University, for more information. Telephone **01895 268736** or e-mail **elizabeth.cassidy@brunel.ac.uk** 

Research ethics approval has been obtained for this study from the School of Health Sciences and Social Care Research Ethics Committee, Brunel University.

### Lecture abstracts with references and speaker biographies





### **LECTURE 1** The physiology of balance

Dr Jon Marsden Institute of Neurology, Queen Square, London

Due to the small base of support and high centre of mass, bipedal standing is inherently unstable. While standing still the body tends to sway like an inverted pendulum about the ankle joints. As the centre of mass normally projects in front of the ankles there is a tendency to fall forwards. This is counteracted by opposing torques (turning moments) generated by activity in the ankle plantarflexors. This plantarflexor activity is not simply elicited by stretching the muscle eliciting a stretch reflex as the size of the subsequent stretch-evoked contraction is not large enough to balance the body load. An alternative mechanism is that the plantarflexors contract tonically. The tonic contraction would make the muscle act like a stiff spring. In this case moving forwards would stretch the stiff spring resulting in the generation of force that opposes further motion. Larger contraction levels would result in a higher spring stiffness that could in turn oppose greater loads, for example if you had a racksac on your back<sup>1</sup>.

However, recent work has found that the overall stiffness that can be achieved in the ankle-plantarflexor-tendon complex is too small to counteract the body load because the achilles tendon that lies in series with the muscle is too compliant<sup>2</sup>. Instead the only way we can balance with a 'weak' spring is to apply centrally generated intermittent contractions that act to 'catch and throw the body'<sup>3</sup>. The timing and size of these intermittent contractions is critical and is the result of predictive behaviour. Following an upper motor neurone lesion an increase in stiffness of the ankle-plantarflexors-tendon is commonly seen<sup>4</sup>. This may be a compensation for deficits in central predictive control. Here the person may stand mainly using a simpler'stiff' spring strategy.

Sensory information is required for the predictive behaviour normally seen during balance as well as to detect and correct larger postural perturbations that threaten balance. The sources of sensory information that are used for balance: cutaneous, proprioceptive, visual and vestibular information do not act in isolation but interact with each other.<sup>5,6</sup> The cerebellum seems to play an important part in the process of multi-sensory integration. Higher cortical centers can also modulate the brainstem area involved in postural control. Damage to these descending cortical projections, for example in stroke, may contribute to the asymmetries in balance responses that are commonly seen between the paretic and non-paretic legs<sup>7</sup>. Just as sensory information can be used to modulate balance in the experimental setting it could also be used to modulate balance during the rehabilitation of people with central nervous system lesions.

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Jon Marsden trained and practiced as a physiotherapist prior to undertaking further training in human neurophysiology at University College London. He currently works at the Institute of Neurology in London.



David Fitzgerald MCSP Dip Eng Grad Dip Manip Ther

The last fifteen years has seen a large increase in scientific publications relating to mechanisms of trunk stability and rehabilitation strategies to optimise this requirement. This review will focus on the established facts pertaining to this debate but also on the philosophical concepts which have driven this research and led to a diversity of therapeutic strategies. We will confine the extent of discussion to issues relating to biomechanical modelling, mechanisms of motor control, skill acquisition, and aspects of movement control/stability which are variable, dynamic yet constitute essential components of functional movement.

The current enthusiasm for detailed muscle analysis in the assessment of dysfunction is an old theme revisited. Kendall & McCreary, Lewitt, Janda, Klein-Vogelbach, Bobath, Carr & Sheppard and Davies have all made significant historical contributions recognising the importance of trunk control and proximal limb girdle stability as a prerequisite for efficient function.

In the field of musculoskeletal medicine Jull, Richardson, Hodges, Hides, Mosley, O'Sullivan, and Sahrmann have all been prolific researchers in the field of functional disturbance in the presence of musculoskeletal pain and impairment. This must be evaluated cautiously in extrapolating to patients with CNS lesion.

Much of the impetus for current research was driven by the initial findings of Creswell (1989) observing the continuous activation of transverse abdominus with spinal motion independent of the direction of motion. Simultaneously Bergmark (1989) postulated a concept of global and local muscle control, which was functionally specific but also inter-dependent. Panjabi (1992) introduced his innovative, now ubiquitous, model of spinal stabilisation incorporating three interdependent elements contributing to spinal stability namely: a passive subsystem, an active subsystem and a neural control subsystem. This model has been extrapolated to many other body regions.

### **Biomechanical considerations**

Numerous in vitro studies of the lumbar spine have demonstrated that the osseo ligamentus structures alone are insufficient to withstand the

stresses of normal functional loading. Not surprisingly the requirement for superimposed motor regulation is essential for the execution of co-ordinated movement and the prevention of harmful destructive stresses on the musculoskeletal system. This requirement is replicated in virtually every moving joint. The term 'stability' is not a static biomechanical model but a concept involving control of alignment in the presence of motion ie function.

There are a number of exercise rehabilitation programmes aiming to improve stability in the lumbar spine by targeting a variety of trunk muscles. They aim to optimise control of segmental motion, spinal stability, spinal stiffness, spinal orientation or varying combinations of these characteristics.

### The debate

Whilst it is generally agreed that exercises should be part of a management regime in patients with low back pain there is significant variation in the type of exercise and the proposed mechanisms of effect of each type. Advocates of general spinal muscle exercises contend that their effectiveness is due to:

- · Increase power both segmentally and regionally
- Increased tension in the thoraco lumbar fascia (through multifidus hypertrophy)
- Increased segmental compression
- Facilitation of co-contraction of trunk flexors and extensors to limit the potential for spinal buckling

The proponents of specific, segmental stabilising regimes contend that some muscles are better suited to stabilising spinal elements due to:

- Biomechanical orientation
- Anatomical configuration
- Neurophysiological activation
- The contention is that these deep muscles:
- Are required to work synergistically with more superficial power in order to control potential hazardous stresses upon spinal segments
- · Maintain tonic activation in low load postural challenges.
- Are frequently prone to dysfunction in the presence of pain or disuse.

### Mechanisms of motor control

The mechanisms of motor control in trunk muscle recruitment can be considered as interaction of feedforward and feedback control (the so-called closed-loop and open—loop systems respectively) which regulate trunk and limb girdle alignment relative to gravitational challenge. Of interest relating to 'core muscles' is the integration of a pre-programmed, feedforward control sequence of muscle activation (akin to elements of a central pattern generator) and the feedback control, derived from multiple inputs including muscle, which regulate afferent modulation of central programs. In function this integrates with multi-component participation depending on the task in question.

Some evidence for selective feedforward control has been obtained from the classical method of investigation involving a perturbation model. This typically involves monitoring a number of pre-selected target muscle groups in response to movement of a limb in a random or pre-planned fashion. The limitations of this method of data collection relate to the limited number of muscles which can be targeted with invasive fine wire needle electrodes and also the fact that selection of target muscles groups requires hypothesis generation regarding their likely involvement.

### **Evidence of specific recruitment**

It is important to recognise that situations may arise functionally where the requirements for joint stability and postural control maybe contradictory eg the body may need to change the position of the spine in order to overcome a challenge to equilibrium. There appears to be an override mechanism involved in this control in which the maintenance of equilibrium supercedes the maintenance of specific joint stability. There are many clinical examples of distributed alterations in muscle interactions as a consequence of pain or tissue damage. For example gluteal inhibition subsequent to ankle sprain, quadriceps inhibition with knee effusion, rotator cuff shutdown in painful shoulder dysfunction to name a few.

Less obvious, and certainly less investigated, is the sequence of muscle adaptations throughout the body as a consequence of local events such as tissue damage, muscle weakness, pain or preferential recruitment patterns. The astute reader will note that some painful conditions are associated with muscle hyperactivity while others apparent inhibition. It would appear that the relative response is highly variable with multiple factors influencing the final output.

The concept of a neuromatrix (Moseley, 2003) processing multisystem input is particularly relevant here. It postulates that a combination of cortical mechanisms (sensory, emotive and motor output) are activated as a consequence of painful input. This is not hardwired but represents a dynamic situation with a multiciplicity of responses.

The information regarding feed forward control obtained from the perturbation studies indicate that transversus abdominis activity precedes other abdominal muscle activation and there is some degree of anticipatory activation which is pre-programmed and related to the expected force output requirement (depending on arm or leg movement, the direction of loading and the equilibrium force required). There is co-activation with lumbar multifidus as part of a preferential recruitment strategy.

There is also evidence of some synergic interactions between the pelvic floor, diaphragm and the other core muscles in task such as the perturbation challenge and supine active straight leg raise. From a more functional perspective impairments of single leg standing balance have been observed in chronic low back pain patients and impairments of standing balance as a risk factor for recurrence of low back pain. These functional measures are useful and practical but do not localise the mechanism of dysfunction

### Afferent feedback disturbance and movement control

Many types of deficit have been identified involving changes in sensory feedback, abnormal reflex responses and inaccurate coordination of movement.

These disturbances range from alteration in the accuracy of perception of movement to impairment of limb position sense. Muscle activity is known to augment sensory input and therefore alterations in input (hyperactivity or inhibition) may impact upon movement error detection/correction by the CNS. Muscle reflex activation may be both excitatory or inhibitory and therefore affect the activation pattern, timing or force generation in a gross movement pattern. Systematic observation of movement patterns can yield information regarding muscle synergies and help to direct therapy although lacks objectivity. Sensory deficits may ultimately impinge upon coordination by interference with reciprocal inhibition, tension-relaxation timing and the smooth regulation of functional movement requiring sequential activation. The clinician can utilise perception of effort as a sensory measure of muscle activation and the relative involvement of components in a gross movement pattern. One of the major challenges clinically is to identify the contribution of components to functional task. Reduced contributions may arise from biochemical or adaptive changes in local muscle, reduced power output, alterations in recruitment such as sequencing or relaxation, or disturbance in central command mechanisms.

From experimental work it is not always possible to determine the exact component(s) which are responsible for the change in motor control ie do inaccuracies in peripheral feedback impair initiation of appropriate motor commands? We are therefore left with therapeutic strategies which aim to optimise the peripheral input and optimise central motor commands by movement ideation, demonstration, visual, tactile, auditory or facilitatory feedback together with some form of analysis of performance.

### Efferent feedforward disturbance and movement control

The perturbation investigation models pioneered by Creswell and Hodges have identified delayed onset of activity in deep abdominal muscles as eluded to above. Hypertonic saline injection to the paraspinal muscles can also produce similar responses. The peripheral responses already described in relation to feedback disturbance may also influence feedforward control. However these changes must occur in motor planning as the responses are initiated in advance of movement. Of course changes in motor neurone excitability — a common problem in neurological rehabilitation can profoundly influence the execution of a motor command. Ultimately therapeutic strategies require a multisystem input targeting optimal peripheral sensory input and facilitatory techniques to optimise central motor programming.

### Strategies for motor learning and skill acquisition

There has been considerable debate in the literature regarding whether it is more optimal to train motor skills by practicing whole movement or with practice of components of the skill with later integration into a more complete pattern. It may well be that the nature of instruction should match the complexity of the task being trained. It appears that simple tasks executed at modest speed are suitable for segmentation into component parts (sit-stand) whereas complex ones may are better practised as a movement pattern albeit at slower speed initially. Of course what constitutes simple or complex movement is not always easy to define.

The methodology for teaching movement skills may involve instruction, demonstration, analysis or specific kinaesthetic input using tactile, facilitatory, auditory, visual or perception of effort cues to facilitate learning. Therapist feedback regarding the satisfactory execution of the required movement can be by provided by information pertaining to quality and effectiveness of movement (so called 'knowledge of performance') or information regarding the outcome – was the objective achieved (so called 'knowledge of results') as the mode of feedback.

In general information relating to errors in execution lead to skill improvement where as information relating to results is motivational, both may be beneficial. The feedback may either be quantitative or qualitative. Of course in all movement re-education there is a potential for 'paralysis by analysis', in which case the transfer of skill becomes negligible. With any skill training it is important to achieve transfer into functional tasks. This may involve altering sensory input eg visual, tactile or auditory feedback, altering environmental contexts eg surfaces, lighting levels and textures together with unexpected loading (requiring anticipatory responses) and inducing fatigue to evaluate it's affect on performance.

In conclusion the challenge regarding the adoption of current concepts of core stability' to the CNS lesion patient is to equate the level of training specificity possible with the functional potential of the patient. The spectrum of possible impairments (sensory, cognitive and motor output) necessitates critical evaluation by the therapist in the selection of rehabilitation techniques commensurate with the potential for functional improvement.

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David Fitzgerald is an engineer who turned to physiotherapy and has practiced for 19 years. He has developed an interest in understanding functional mechanisms and dysfunction. He works in private practice in Ireland, in the field of musculoskeletal physiotherapy with a keen interest in functional rehabilitation, pain management, occupational overuse syndromes and chronic sports injury rehabilitation. He has followed, published and participated with great enthusiasm in the 'stability debate' since the early 1990s. He loves academic debate!



### LECTURE 3 Light touch aids static and dynamic balance

Prof Alan Wing Director of research for Psychology, University of Birmingham

Standing balance requires that the body centre of mass (COM) be positioned over the base of support (BOS) defined by the outer boundaries of the feet. Perturbations to balance, such as forward or sideways push at the hips, displacing COM result in multisegmental postural reflexes after a delay of around one hundred milliseconds. These resist the perturbation and then restore COM to its original position. Predictable disturbances to balance, such as raising the arms, also displace COM and are associated with anticipatory postural adjustments occurring a few tens of milliseconds ahead of the perturbation. Corrective adjustments to balance are required even in quiet standing because the body behaves like an unstable inverted pendulum, continually tending to fall forwards or sideways. Corrective muscle action, which accelerates COM back to a central position over BOS, causes ground reaction forces and hence fluctuations in the centre of pressure (COP). Body sway, which is correlated with the fluctuations in COP, is normally limited by sensory feedback drawing on visual, vestibular, proprioceptive and tactile inputs. Reduced sensory input, for instance closing the eyes, results in increased sway. Light touch is a relatively recently explored effect in which, for example, finger contact with a fixed external reference, insufficient to provide significant stabilising force, results in more stable standing balance with reduced sway. I will review studies of reactive and predictive postural adjustments in normal balance and in neurological disorders and consider how the light touch paradigm might be used in therapy.

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Alan Wing obtained his undergraduate degree in Psychology at Edinburgh. After a PhD on motor timing at McMaster University in Canada and a postdoctoral period at Bell Labs, he joined the Medical Research Council at the Applied Psychology Unit in Cambridge, working on aspects of upper and lower limb motor control. A long-term collaboration with therapists at Addenbrookes Hospital led to his forming a rehabilitation research forum, the Eastern Motor Group. Alan took up a Chair in Human Movement in 1997 at the University of Birmingham, becoming Director of Research for Psychology in 2001. He runs the Sensory Motor Neuroscience (SyMoN) Lab. Current research projects include movement timing, touch, reach and grasp, posture and balance and involve both normal young and elderly as well as patient groups including hemiparetic stroke and parkinsons disease. As part of his teaching duties, he runs an MRes in Cognitive Neuropsychology and Rehabilitation for graduates most of whom come from psychology and physiotherapy.



### I FCTURF 4 Facilitating autonomy: self-management and exercise in balance disorder

Dr Emma Stack Senior Research Fellow, Rehabilitation Research Unit, University of Southampton

In this presentation, we focus on Parkinson's Disease (PD) as an example of balance disorder. Multiple motor and non-motor deficits, progressive in the long-term and fluctuating in the short-term, compound the complexity of the disorder. Exercise (for strength, balance and flexibility) has long been the mainstay of physiotherapy in PD. Cueing techniques, bypassing the dysfunctional basal ganglia, have proved useful. The application of these modalities continues to evolve as researchers explore their effects and therapists develop specialist skills.

More recently, research has focused on how people with PD negotiate activities such as turning, reaching, rising from chairs and moving in bed. Following analysis in the laboratory and in the real world, researchers have identified a battery of movement strategies that may facilitate these everyday tasks. These techniques, hints and tips are simple. The skill of the therapist lies in assessing the patients' needs and teaching them and their carers appropriate strategies which they can go on to use without constant supervision.

This is timely. For a patient population whose health care needs often remain unmet, the ability to understand their balance challenges and to overcome them independently is almost a necessity. Within disorders such as PD, specialist physiotherapists can make an enormous contribution: increasingly today, that contribution is about helping patients to stand on their own two feet, both literally and metaphorically.

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Emma Stack gualified as a physiotherapist from St Mary's Hospital, London in 1989. Five years later, a brief but memorable clinical career (specialising in elderly care) ended when she dropped out to study at the Institute of Gerontology at King's College, London. With an MSc in Gerontology, she joined Professor Ann Ashburn's team at the University of Southampton, as a Research Fellow in the Rehabilitation Research Unit. The original Southampton study (Predicting Fallers in PD), spawned others on the analysis of 'Fallrelated activities' and her PhD on 'Non-linear Ambulation in PD'. She became a Senior Research Fellow in 2002. Her work involves securing grants and running projects; publishing papers; presenting at conferences around the world; a little teaching (when unavoidable); meetings; more meetings; and running an Ethics Committee.



### Dr Marousa Pavlou Lecturer in Physiotherapy, Kings College, London

This talk will focus on novel treatment approaches for patients with peripheral or central vestibular pathologies. An overview will be given of the prevalence of these conditions, associated impairments, and treatment goals. The evidence base as well as the types of exercises involved will be presented and compared for both current and novel treatment approaches. How these novel approaches can be incorporated into clinical practice will also be discussed as will factors that may affect outcome. Areas requiring future research will be identified.

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### SHARING GOOD PRACTICE

### SHARING GOOD PRACTICE aims to

help spread the word amongst likeminded ACPIN members about either innovative practice, service developments or successful audits. The format is roughly a question and answer session, covering the salient points of the topic, with a contact name for readers to persue if they wish.

As with all articles in Synapse, we are totally reliant on our members contributing material that they feel is of interest to others. So if you have something that has been very successful in your area, and that you are happy to share, then contact Louise Dunthorne at *louise@peterdunthorne.com* 

This interview was conducted by Sesa Ishaya with Kevin Baldry, Rehabilitation Assistant and Anna Matthews, Physiotherapist.

## **ICANHO walking group** The Suffolk brain injury centre for people with acquired brain injury from ages 18 to 65

### What is your walking group?

There are two walking groups at ICANHO. The Intermediate Group is designed to encourage walking in those who may require a walking aid or who may have mild balance difficulties. The Advanced Group is designed for higher-level endurance, fitness and balance training. It aims to challenge the clients' ability to cope with walking situations that may occur in everyday life.

### How often do they run?

The groups run weekly for an hour. The Intermediate Group is usually three weeks in duration and the Advanced Group is six weeks.

### Who attends?

Any client can be referred to the group by any member of the MDT who fills out a referral form including a risk assessment and statement of any medical conditions. The clients are screened with relevant outcome measures to ensure they are entered at the appropriate level. It is recommended that for the Advanced Group clients should have: • A Berg Balance Score of 45/56 or above

- Completed the six minute walk test
- Have a minimum walking speed of 0.75m/second
- Demonstrated the ability to walk continuously for 15 minutes

### Who runs your group?

A physiotherapist and a rehabilitation assistant run a group of six to eight clients. They do a risk assessment of the route they intend to take, carry a mobile phone, bring sun block and water.

### Where do you walk?

For the first two weeks the Intermediate Group walks within the ICANHO grounds which has a variety of surfaces. In the third week, we meet at Needham Lake which has a paved path around the perimeter of the lake and includes slopes, slants, steps and gravel.

The Advanced Group meets in a number

of locations including Needham Lake, town centres and local sites where there are various footpaths. If it happens that the group has clients from the same part of Suffolk, we focus on walks in that area.

### What is the purpose of the group?

The Intermediate Group is designed to give the clients targeted walking practice. It includes walking over a variety of surfaces both indoors and outdoors. Clients may use walking aids or orthotic devices if required. They may need to negotiate curbs, steps, slopes and uneven ground.

The Advanced Group works on stamina, endurance and general fitness as well as the more general aspects of walking. Clients have the opportunity of leading the group, using orientation and map-reading skills if these are required.

As the clients walk in groups, they are encouraged to talk and support each other. Many of the clients have gained enormous benefit from this. Some of the clients have communication problems and find that inclusion in this group can be supportive as the group encourages social interaction.

In the final session of the Advanced Group, we finish the walk with a trip to a coffee shop. This encourages the clients to recognise the possibility of doing this type of activity with their friends. It also gives them an opportunity to arrange to meet up again if they so choose.

### Is walking all you do?

We don't let a little rain stop us but there are times when the weather just won't let us go out. On those days we set up a suitably graded obstacle course in the gym.

### What results do you get?

The feedback we have received from clients who have been in the walking groups has been very positive. In the majority of cases the outcome measures used improved significantly. The clients report a difference in their walking speed and the distance they can cover by the end of the group. This means they are either able to return to some of their previous hobbies or simply that they are able to function in everyday activities more efficiently. For some clients it has meant they are better equipped to return to the workplace and have the stamina and endurance required for integration back into the work environment. Family members also observe the benefits of the group. Many have commented on the improvements they have seen regarding their loved ones' abilities, mood and enthusiasm.

### What happens when the group comes to an end?

Clients who have enjoyed the group are encouraged to continue walking either independently, with family and friends or to join one of the various community walking groups that take place across Suffolk. They are given the Suffolk Health Walker Programme and information on the local Ramblers' Association.

### How do you know the programme has been successful?

Our dropout rate is very low and most clients are disappointed when the group comes to an end. A random telephone audit was done by a volunteer which reported that after six months seven out of the nine people who responded were still using walking as a form of exercise two to four times a week. This exceeded our expectations and quite frankly, we were surprised.

Do you plan to expand your programme? We are always looking at how we can change the programme to meet the various needs of our clients and when it comes to exercise, there is a number of avenues we can take. We are exploring introducing classes such as Tai Chi, Pilates and even ballroom dancing.

### Letters

### Dear Colleagues,

We are compiling a list of abbreviations used in neurological physiotherapy to be used at a local level. A physiotherapy notes audit for neurology in-patients highlighted inconsistencies in terms and abbreviations used between therapists. The purpose is to standardise the use of abbreviations and therefore improve patient care. We are asking if ACPIN members have any existing list of abbreviations that they use if they would be able to share that information. When the list is compiled and agreed we are planning to distribute it among all contributors for their information.

Many thanks.

Pat Morfitt Sn II Physiotherapist Pat.Morfitt@wash.nhs.uk

Jo Gilmore Sn II Physiotherapist Jo.Gilmore@wash.nhs.uk

Neuro Gym, Physiotherapy, Worthing Hospital, Lyndhurst Road, Worthing, Sussex. BN11 2DH

## **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.



### STROKE TALK: A COMMUNICATION RESOURCE FOR HOSPITAL CARE

Sophie Cottrell and Alex Davies Connect Press ISBN 0 953 60425 X £60 plus £5 p&p

Review by **Michelle Aspinall** Senior Physiotherapist, Hope Hospital, Salford.

Stroke Talk is a communication resource to be used by healthcare professionals, patients and carers within acute stroke care wards. It was devised by Sophie Cottrell and Alex Davies, two speech and language therapists from North Bristol NHS Trust to help people with aphasia. It was developed in consultation with people with aphasia and staff who use stroke services. Its aim is to help communication in this particular client group who may have difficulty understanding spoken and written language.

It begins with a succinct introduction of how the resource tool was developed and describes easily how Stroke Talk should be used. It consists of basic information of the stroke journey, from the early days in hospital to discharge and then follow up in the community. It then explains about the many different professionals that will be involved with care and their roles as well as the numerous tests that may be undertaken and why. It also includes common medications used in stroke care and information on infection control. It is complemented by diagrams and photographs where applicable which could include equipment that may be used, say a CT scanner or ultrasound, and professionals and their uniform, blue for physiotherapists and green for occupational therapists.

It is to be used with the people with aphasia and carers, as an aid to



Authors Sophie Cottrell and Alex Davies

communication and as an adjunct to discussions. It even includes appointment cards that can be filled in and given to the patient so that as they attend different departments they can then present the card eg PEG, video fluoroscopy, ultrasound.

Whilst some of the information and diagrams appear quite basic, feedback from users has praised its simplicity at a time when information overload is almost inevitable. I imagine that users will find the book easy to read and will promote further discussions with their healthcare professionals. Ultimately, the person with aphasia will be more informed and thus feel in more control of their care. In the acute setting it would be useful to have at each bedside (it is in ringbinder form and plastic covered), readily available to all professionals as the need arises, but more importantly, so that family can freely read the information available and reinforce communication at visiting times. The diagrams will help the patient 'imagine' where they are going for their test eg a picture of a CT scanner and the professionals that will be there and ease the stress of not knowing what will happen. This is then complemented by basic information about the procedure of the test and when results will be available and who will give those results. We all feel more at ease the more informed we are.

One of the most novel features of the book is that full photocopying rights are granted with the published version of *Stroke Talk*, so following discussion with the patient photocopies of that particular subject can be handed out. This will help reinforce the information already given at a time when the patient may be more ready to absorb it.

Although the book has been devised for people with aphasia I think it would be a useful resource tool for most people with stroke. Patients will always have some tests, have different disciplines involved and even when communication is intact it can be confusing to know what tests are for and why so many professionals need to be involved. Although all this should be explained it may not necessarily be retained at one session. *Stroke Talk* would then prove useful for the patient to read through and again reinforce this information, especially if a copy was at each bedside.

Overall, I think *Stroke Talk* is an invaluable resource tool for those working in stroke services. The information is readily available, covers a wealth of subjects and can be adapted to the individual patient and photocopied when needed.

Stroke Talk: A Communication Resource for Hospital Care is available from: Connect Press, Connect – the communication disability network, 16-18 Marshalsea Road, London, SE1 1HL. Tel: 020 7367 0840. Email: publications@ukconnect.org.uk

The Department of Health has funded one copy of Stroke Talk and one copy of the Stroke and Aphasia Handbook for every stroke unit in England. See the Connect website for more information.

### CEREBRAL PALSY IN ADULT LIFE

Kent ACPIN 3rd February 2006 Tutor: Christine Barber, Director of Therapy Services, Bobath Centre

### Review by James Sampson

An extremely informative and well received study day, exploring the complexities of Cerebral Palsy in Adult Life. The day consisted of a series of theoretical based lectures interspersed with practical demonstrations. Time was given to discuss individual cases and reflect on our previous experiences. Various topics were explored including:

• Understanding pain in Cerebral Palsy

- Managing the orthopaedic and neurological components of the condition on a background of established pathology
- Appreciation of common complications that affect the client eg visual, perceptual and communication difficulties
- · Impact of secondary complications
- The impact of surgery in the overall picture.

We developed a greater understanding of the classifications of cerebral palsy and the subsequent clinical presentations of these classifications.

We had the opportunity to refresh our knowledge of the developmental milestones and the serious impact that cerebral palsy has on these landmarks. We discussed the difficulties associated with a failure to develop an effective postural control mechanism and how this might affect the client in later life.

The feedback from the whole day was extremely positive and certainly challenged all the attendees to approach the problems of their adult cerebral palsy clients with a renewed perspective and direction.

Many course attendees indicated that a follow-up day would be valued in the future to help consolidate their learning and to tackle other areas not discussed on day.

### GOAL NEGOTIATION: A SHARED JOURNEY

ACPIN Scotland 20th June 2006 Tutor: Cathy Sparkes

#### Reviewed by Margaret Gear MSc MCSP

Cathy Sparkes is a specialist speech and language therapist who, following extensive neuroscience experience, completed a diploma in counselling and psychotherapy in 2003. Her business offers a range of courses and workshops including client-centred goal negotiation and planning. ACPIN Scotland invited Cathy to teach a one-day goal negotiation course in Falkirk for a mixed group of neurophysiotherapists and nurses from across the region.

The course comprised a combination of lectures, accompanied by comprehensive handouts, and small and whole group work exploring participants' current approach to goal planning and potential for change in our goal planning services. The emphasis was on goal negotiation within a multidisciplinary in-patient team.

- Course objectives included: • Understanding of relevance of
- client-centred goal negotiation as a foundation for rehabilitation
- Knowledge of principles and processes of goal planning and negotiation
- Providing a variety of practical ways of explaining goal negotiation to the client, family and friends
- Enhancing goal writing and critiquing skills.

The day started with an interesting exploration of how and whether we use goal planning in our own lives; some do and some do not. Later in the day we continued this theme in small groups by negotiating real-life goals with each other.

The principles and processes of goal negotiation were described in detail. The ten-stage goal negotiation process demands more time than many of us spend on goal negotiation at present, but Cathy advocates 'taking time to save time' and underlines that goal negotiation should be the backbone to service delivery.

Every patient may not be ready to negotiate rehabilitation goals. Motivation was described as a state of readiness for change that fluctuates over time and across situations. Cathy introduced us to the six stage model of change proposed by Prochaska & Diclemente (1986). She described for us the stages of pre-contemplation, contemplation, determination, action, maintenance and relapse, and the changing role of the therapist at each stage. On average people cycle through these stages four times before achieving stable change. Considering where our patients were in the cycle provided some helpful insights into their difficulties with goal negotiation. Several of the physiotherapists on the course shared the problem of patients clinging to unrealistically high expectations of therapy. Perhaps this problem could have been addressed more fully on a two day course.

Cathy then outlined strategies to help the client grasp the concept of goal negotiation: giving written, verbal or drawn information, setting the environment and understanding how to balance the power and increase clients' participation at meetings. A video of a goal negotiation meeting provided a practical demonstration of much of the theory we had learnt during the day before we practiced writing goals for our patients and ourselves. During the last session we wrote goals to improve our own goal negotiation service.

As the emphasis of the course is on the processes of goal negotiation within the multidisciplinary team (MDT), I would particularly recommend the course to members of the same MDT who hope to adopt this approach.

### SPASTICITY MANAGEMENT STUDY DAY

Surrey and borders ACPIN study day 17th November 2006 Royal Surrey County Hospital, Guildford, Surrey

Review by **Louise Bateup** Committee Secretary

The spasticity management day was organised by the local ACPIN committee in response to members wishes and attended by both members from the local area and those from further afield. The day comprised of guest speakers presenting lectures in the morning and workshops in the afternoon facilitated by more local specialists in their field. The morning started with a lecture from Dr John Rothwell who provided an excellent and comprehensive update and review entitled 'Pathophysiology of Spasticy'. This was followed by Jane Burridge's lecture entitled 'Measurement of Spasticity'. This first reviewed some of the factors to be considered when choosing a measurement tool, then discussed the measures currently available and went on to update us on some of the current developments within research.

The afternoon allowed participants to choose two of the three available workshops to further explore questions, which had been raised in the morning's lectures and share current practice within a range of work areas with reference to current available literature. The three workshops were entitled: 'Clinical Measurement of Spasticity', 'Clinical Treatment of Spasticy' and 'Management of Spasticity including Botox Teatment'. There was then an opportunity for a feedback session to pull together ideas, which had been raised within the workshops. It proved very useful to share current practice in different work areas with regards to how spasticity management was tackled and by which professionals. In some areas spasticity management clinics were run using a team approach, whereas in other areas botox clinics were run in isolation with difficulties reported in co-ordinating timely physiotherapy intervention. There were a wide range of outcome measures which were being used within clinical practice with a general sense that none of these were ideal. A very interesting discussion followed looking at what we would ideally like from an outcome measure and how we could maybe work more closely with research therapists in order to achieve this.

Feedback from the day indicated that it was found to be beneficial to participants with a good mix between theoretical update and workshops and was a very affordable option for members to keep updated in this area.

### **Regional reports**

### KENT Janice Champion Regional Representative

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 new Chair.

We finished our 2006 programme with a study day on 'The Dynamic Trunk' which was held in Gillingham. Several local speakers covered topics such as postural control, pilates, posture and SALT, and wheelchair seating. We were kindly sponsored by two companies which helped keep the cost of the course to a minimum.

Our 2007 AGM was held in March at Medway Maritime Hospital and Colin Waldock, Clinical Specialist gave a fascinating talk on 'The Use of Myofascial Techniques in Neuro – Rehabilitation'. As usual, with the enticement of a buffet supper, this evening lecture was well attended.

We are hoping to run a vestibular rehabilitation study and a two day clinical workshop later this year. Any ideas from members for future courses are always welcome.

#### LONDON Sandy Chambers Regional Representative

The London Region Committee would like to thank all of the programme speakers this year for their extremely interesting, professional and thought-provoking presentations. In 2006, we continued with our mix of evening lectures and study days to great effect! The feedback has been excellent for the lectures and for the venue. As a committee, we would like to thank our London members for their feedback and comments over the last year. We feel that it is important to try to accommodate as many of our regional members as possible in planning the format of the meetings and the topics covered by the London ACPIN programme. Your comments help to shape the programme for the following year. We will continue to use the National Hospital for Neurology and Neurosurgery at Queen Square this year and will also 'spread' the venues a bit further to accommodate our large membership.

We have received some suggestions for practical based or workshop events for next year; however, we feel that we would struggle to accommodate members effectively. These events are only available to a very small number of participants due to the need for space, equipment and small groups for patient demonstration. Given the current heavy demand to attend, this would leave the vast majority of you disappointed. The ACPIN programme aims to provide theoretical and practical, evidence based lectures that will be useful to members in their physiotherapy practice and that will be accessible to most people who want to attend

By the time you receive your Spring *Synapse* we will be anticipating three courses on our schedule:

- May 19th study morning Getting through and getting on: Feedback and practice for stroke patients), Dr Paulette van Vliett
- September TBC The Sue Edwards Honorary Lectures (evening lecture with wine and cheese)
- November TBC evening lecture Dystonia, Dr Karin Rosenkranz Your London Region Committee has changed and grown again in the last year and I would like to welcome our new members. Amanda Wallace, based at the National Hospital for Neurology and Neurosurgery, Chris Manning from Kingston Physiotherapy School, Cathy Donaldson and Emma Cooke, from St Georges

University, Kirsten Cheadle based at the Hammersmith and Fulham PCT, and Leigh Forsyth, based at Hammersmith Hospital. Best wishes for 2007.

### MANCHESTER

Regional Representative

A very belated Happy New Year from Manchester ACPIN! There are vacancies on the committee at present, so if you would like to join us just let us know.

The revised, bi-monthly lecture programme format is continuing this year. The programme for 2007 has been planned with a multi-disciplinary approach in mind and to incorporate broader aspects of physiotherapy intervention, such as a follow-up on MSK techniques. We always welcome feedback from the membership.

### Remaining 2007 programme

- May Ataxia: the Science, Dystonia nurse specialist
- July Parkinsons Disease Management update, Parkinsons nurse specialist
- September Driving with a Neurological condition
- November Medical update on Stroke

Poster displays at each evening meeting will continue, these can be about a research project, practice and service development or an area team – anything that helps information sharing in the region.

We hope that Manchester ACPIN membership can regain some ground as there has been a dip in numbers over the last year or so, and have some strategies in mind to facilitate this – all will be revealed in due course!

### **NORTHERN IRELAND** Joanne Wrigglesworth Regional Representative

On behalf of the Northern Ireland committee, I would like to thank all of the physiotherapists who have attended our recent evening lectures. It has been fantastic to see so many new (and a few old!) faces – please keep attending! Our new programme started with a bang in September, with an interactive workshop on neurological assessment. This was consolidated by a patient demonstration in the newly opened Regional Acquired Brain Injury Unit. An in-depth lecture on vestibular rehabilitation completed our pre-Christmas programme.

Unfortunately, our January lecture on the Bobath concept was cancelled, due to the tutor being unable to fly in high winds! The perils of living on an 'Ireland'! The committee have begun planning the 2007/8 lecture season (if only we could be so organised in the rest of our lives!) and are hoping to release details of an Introductory Bobath weekend series soon. The possibility of a course on the upper limb, primarily aimed at senior staff, is still being explored.

We are looking forward to an exciting programme in the coming months and are hoping to share this with all of our NI colleagues.

### NORTHERN REGION Pam Thirlwell

Regional Representative

Hello everyone by the time you read this the Northern ACPIN programme for 2007 will be well underway

In January we held an upper limb course in Carlisle with Pam Mulholland as the tutor-thanks to Pam and also to all the staff at Carlisle for helping with organsing the event.

In March we had an Ataxia course with Lynne Fletcher – this was hosted at Wansbeck Hospital and we would like to thank Lynne and the staff at Wansbeck for their help too.

Later in March was the annual ACPIN conference in Sheffield this year-much easier to get to than Northampton for us Northerners! The topic this year was balance – always useful whatever field of Neurology you work in. The rest of the Northern ACPIN programme includes :

- June/July study day on the Brain Gym
- September/October Vestibular Rehab Course

Other ideas for later in the year also include a splinting course and a half study day from Saeboflex

We are also planning a course on ABI with Bobath Tutor Sue Raine-this will be at the start of next year.

There have also been changes within the Northern ACPIN committee; the chairperson, Heather Hunter has retired as has the treasurer, Christina Whittenbury.

I would just like to take this opportunity to thank both Heather and Christina for all their hard work over the years and wish them well for the future – at time of this report their posts had not been filled. This leads me nicely on to ask any interested ACPIN members who would like a more active role within Northern ACPIN and join the committee to contact either myself or any other committee members.

Thanks again for supporting Northern ACPIN

### OXFORD Sophie Gwilym

Regional Representative

2006/07 has been a busy period for Oxford ACPIN with a programme of well attended evening lectures including interesting and informative talks on incomplete spinal cord injury, wheelchair skills, posture and seating, orthopaedic intervention for the foot and ankle and the challenge of putting MS guidelines into practice. We also held an extremely popular half day shoulder workshop and a two day gait and balance course.

Our committee has had some changes with the resignation from the commitee of Emma Blair, treasurer. We wish Emma well with her new ventures. Fiona Cuthbertson stepped down from the regional representative role and is replaced by Sophie Gwilym. Luckily for us, Fiona remains on the committee and we thank her for her continuing support. We also congratulate our secretary, Nicola James on the birth of her daughter. We welcome our new committee members: Jo Pierce, Bev Reetham and Claire Fordham and our new treasurer Rachel Ker and say goodbye to Jane Bennnett who has left the committee and also had a baby girl!

Our programme for the rest of 2007 is being finalised at present. Confirmed dates for the diary as follows (all evening lectures):

- 19th June Stroke Prevention and the OXVASC study, OCE
- 12th July Summer social, punting and a meal
- 19th September Neuroscience lecture by local consultant

neurosurgeon – title TBC Further lectures and study days are planned. We advertise by flyer, on interactive CSP and in *Frontline* closer to the dates so please check regularly.

If anyone has any suggestions for speakers or courses or would like to host an event at their hospital, please get in touch with myself or any member of the committee. We are always looking for new ideas!

Thank you to everyone who supports Oxford ACPIN and all the hard work over the past year.

### SCOTLAND Lindsay Masterton/Dorothy Bowman Regional Representatives

Regional Representatives

We recently held a management of long-term conditions (one day course) with Ross Grieve which was very informative and prompted good discussion. We also had a 'Hand practical' with Debbie Strang who delivered a useful practical course on hand rehabilitation giving us current evidence based practice. Future events include:

- 5th May Management of the Dizzy Patient by Andrew Clements,
- Southern General Hospital, Glasgow.
- 9-10th July MRP Lower Limb by Karl Schurr, venue to be confirmed.

 September/October – EFT evening lecture, Glasgow

Scottish ACPIN continues to be an innovative group which welcomes ideas for courses from its members.

### SOUTH TRENT

Regional Representative

- May 24th evening lecture: Pilates: practical workshop, Ilkeston
   Community Hospital at 6pm
   Contact: Hannah.Milne@derby
   shirecountypct.nhs.uk Restricted
   spaces so please book ahead
- June evening lecture: MS drug therapy with Dr Evangelo, Nottingham TBC Contact: Priscilla.White@nhs.net
- September 8/9th Get on the Ball for neuro, Ripley TBC Contact: Ruth.Cutts@derbyshirecountypct. nhs.uk
- November Neurophysiology of the cerebellum with Nigel Lawes TBC Contact: Rachel Underwood runder29@yahoo.co.uk

### Proposed Plan 2008

- Upper Limb practical workshop with Bobath Tutor
- Vestibular Rehabilitation evening
   lecture
- CIMT evening lecture
- Combined approach: neuromusculoskeletal workshop

### SOUTH WEST Kate Moss

Regional Representative

The South West region has had a successful season with good attendance for informative evening lectures and day courses. We have have successfully presented courses on interactive CSP and a set of evening lectures on the shoulder. Our AGM on March 3rd 2007 was about a pain management programme.

Courses scheduled for 2007 include a spasticity study day, MS study day, gym ball course, postural control study day and some evening lectures with topics to be confirmed. All courses are advertised on www.southwestacpin.net and in *Frontline*. If you are interested in becoming a member of the committee or have any suggestions for topics for speakers for the forthcoming South West ACPIN programme please contact me katy.moss@glos.nhs.uk

#### SURREY & BORDERS Brigitt Bailey

Regional Representative

We have had a successful year with high membership numbers and a large and strong committee. By the time this issue of *Synapse* is published we will have had our yearly AGM with some changes to the committee and hopefully some new members.

We started our first lecture after the summer break at Frimley Park Hospital with a talk from Dr Fiona Jones on 'A person focused approach to enabling self management after stroke'. This evening lecture attracted a lot of interest and very lively discussions. We are all looking forward to hearing and learning more about the proposed workbook, which is being developed.

The 'Spasticity Study-day' held in November was full and the combination of lectures in the morning and workshops in the afternoon, appeared to be a popular format. Dr John Rothwell gave us a very good review of the neurophysiology of spasticity and Dr Jane Burridge's lecture on how to measure spasticity was very informative and thought provoking.

At the AGM at the end of February, we are looking forward to a lecture by Professor Val Pomeroy on 'Rehabilitation treatment schedules: enabling research into underevaluated conventional interventions'.

### Forthcoming lectures are:

- June 19th 'Head injury' by Prof L McClellan at Frimley Park Hospital
- September 13th 'MSA' by

Catherine Best from the Sarah Mattheson Trust at Woking Community Hospital

 November 22nd – 'Exercise post stroke' by Dr Mary Cramp at Frimley Park Hospital

We are also planning to run the three Bobath modules starting in September 2007 – details to be circulated nearer the time. Any ideas for future topics are always welcome and very much appreciated.

I will have resigned from the committee by the time you receive this *Synapse* and Kate Moffatt will take over as our regional representative. Her contact details are: Kate Moffatt, Physiotherapy Department, Royal Surrey County Hospital, Guildford, Surrey. Email: kate.moffatt@nhs.net Work tel : 01483 571122 bleep 0902

### SUSSEX Clare Hall Regional Representative

The membership is at a healthy level in Sussex although more members are always welcome. Do get in touch if you'd like to join the committee; we usually meet about four times a year to plan the programme and discuss any other relevant items.

Sussex ACPIN aims to provide four events per year in different venues.

Unfortunately, the course that was booked for 23rd September ('Practice and Feedback for Stroke Patients' with Paulette Van Vliet) was cancelled. We hope to re-run it later in the year.

The next event was a small group who gathered to hear 'Feedback from ACPIN Stroke Conference' by Norah Bessant and Dee Stark, ACPIN members who had been funded by Sussex ACPIN to attend the National Conference. Their feedback was well received.

At the time of writing, our programme for 2007 is being influenced by national NHS issues which are adversely affecting funding for study leave and course expenses. 2007 Study Day programme;

- Vestibular Rehab, jointly with Kent ACPIN. Details TBC.
- Practice and Feedback for Stroke Patients, details TBC.

We are always seeking further ideas for topics, speakers and venues. Have a think and let us know about your wishes for next year's programme. Contact details of all the committee are on the website.

### WESSEX

Mary Vincent Regional Representative

On behalf of the region I would like to thank Ros Cox for being our Chair throughout 2006. Your knowledge and experience with ACPIN has enabled the new committee which was formed in 2006 to grow in strength and confidence. The committee welcomes Jenny Baker into her new role as chair and offers thanks to Heather Back for continuing her role as treasurer and Marjon van Wees for all her continued hard work as secretary.

Wessex held a number of successful evening lectures/courses throughout 2006 and the Committee are in the process of finalising the 2007 programme, which will be distributed to regional members shortly. Attendees to regional lectures/courses will now receive a certificate to include in their CPD so please continue to support these events and boost your CPD activity!

### WEST MIDLANDS

Fiona Wallace Regional Representative

On behalf of West Midlands ACPIN Committee members I would like to thank Liz Cohen for all her hard work as regional representative and congratulate her on the birth of her son Henry. I would also like to congratulate Linzie Bassett (Chair) on her outstanding achievement on receiving a Fellowship from the CSP.

I am pleased to report that despite a few changes in 2006 the West

Midlands Committee remains strong with twelve regular attendees.

In November 2006 the committee organised an Out Patients Techniques in Neurology Course, led by Helen Lindfield and held at Worcester Hospital. This course was well attended and received excellent feedback.

The 2006 Course Programme concluded in December when we welcomed Niki Ward to Moseley Hall Hospital for an evening lecture on MS updates/recent research. It was free to all ACPIN members and only £1 for non members, it proved to be very popular and was oversubscribed.

Helen Lindfield was due to kick start the 2007 programme by presenting a 'Clinical Application of Outcome Measures in Neurology' workshop at Moseley Hall Hospital on the 17th February 2007 followed by the AGM, however this was cancelled due to unforeseen circumstances. The committee members hope to rearrange both these events for sometime in the near future.

The following study meetings and lectures are also in the process of being arranged;

- May Non-Traumatic Spinal Injuries – an evening lecture led by Dr Asar
- Cerebral Palsy in Adult Life a study day led by Dr Christine Barber, Bobath Tutor
- PNF a two day course led by with Niki Rochford

Please look out for the confirmed dates and venues of these events and the AGM in fliers and adverts in Frontline and on iCSP.

The committee has begun suggesting topics for 2008 if you have any ideas for courses or feel you would like to come along to a committee meeting please do not hesitate to get in touch.

### **YORKSHIRE** Jill Fisher

Regional Representative

Many thanks to Anna Marritt for all her work over the last few years as secretary for Yorkshire ACPIN. She has had to leave the committee recently when she moved away. Catherine Crampton kindly agreed to become the new secretary. Michelle Pickstock also has also unfortunately had to leave the committee because of relocation.

The recent programme has included a joint spasticity study day in November with our local OT colleagues – a very good, wellattended day held in Dewsbury. We are hoping to maintain the local physiotherapy and OT link with future events.

Dr Lilly presented an interesting evening lecture in January on 'Recent Advances in Medical Management of MS'.

In February Sally Winterburn gave a very well supported talk in York on 'Vestibular Rehabilitation'.

On May 15th Mary Lynch-Ellerington will be speaking at York District Hospital on 'Incomplete spinal injuries'. Other future events include a clinical psychologist who will speak on 'Practical Strategies For Behaviour Management Within Physiotherapy', and a 'Gait' study day led by Debbie Strang.

The Yorkshire AGM will be held on April 21 st. Liz McKay along with two of her colleagues from Leeds Metropolitan University will be speaking, at what I am sure will be a very popular day, on 'Clinical Decision Making in Neurology'.

Yorkshire members please consider joining the committee at the AGM. As well as making an important contribution in helping to provide an excellent education programme, it's also a great networking opportunity and quite a lot of fun!

# Guidelines for authors

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

#### CASE REPORTS

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

#### Introduction

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

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

### The patient

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

#### Intervention

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

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

#### Method

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

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

### Implications for practice

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

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

#### Summary

List the main lessons to be drawn from this example.

#### References

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

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

### ABSTRACTS OF THESIS

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

#### AUDIT REPORT

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

#### REVIEW OF ARTICLES

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

#### PRODUCT NEWS

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

#### REVIEW OF BOOKS, SOFTWARE AND VIDEOS

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

### LETTERS TO SYNAPSE

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

### PREPARATION OF EDITORIAL MATERIAL

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

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

The first page should give:

- The title of the article
- The names of the author(s)
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- The text should be well organised and written in simple, clear correct English. The positions of tables, charts or photographs should be appropriately titled and numbered consecutively in the text.
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As the International System of Units (SI) is not yet universal, both metric and imperial units are used in the United Kingdom in different circumstances. Depending on which units were used for the original calculations, data may be reported in imperial units followed by the SI equivalent in parentheses, or SI measurements followed by imperial measurements in parentheses. If the article mentions an outcome measure, appropriate information about it should be included, describing measurement properties and where it may be obtained.

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### **Regional representatives**

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### EAST ANGLIA Sesa Ishaya

t: 01449 774161 e: sesaishaya@icanho.johngrooms. org.uk

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

### LONDON

Sandy Chambers Physiotherapy Department St Thomas' Hospital Lambeth Palace Road London SE1 7EH t: 020 7188 5088 e: sandra.chambers@gstt.nhs.uk

MANCHESTER Helen Dawson e: Hedawson@talk21.com

MERSEYSIDE Jo Jones t: 0151 282 6000 ext 6497 e: Joanne.jones@rlbuht.nhs.uk

**NORTHAMPTON** Position vacant

### NORTHERN

Pam Thirlwell t: 01642 282640 e: pthirlwell@stees.nhs.uk

### NORTHERN IRELAND

Joanne Wrigglesworth Physiotherapy Department Belfast City Hospital Lisburn Road Belfast BT9 7AB t: 028 90329241 ext 2545 e: joanne.wrigglesworth@ bch.n-i.nhs.uk

### NORTH TRENT

Emma Procter Brearly Physiotherapy Department Northern General Hospital Hernes Road Sheffield S5 7AU t: 0114 271 5088 e: emma.procter@sth.nhs.uk

### OXFORD Sophie Gwilym

e: sop-pendred@yahoo.co.uk

### SCOTLAND

Lindsay Masterton CRABIS Ability Centre Carmondean Livingstone EH54 8PT e: dmasterton@btinternet.com

### SOUTH TRENT

### Tina Hutchinson

Physiotherapy Department Derby City General Hospital Uttoxeter Road Derby DE22 3NE t: 01332 340131 bleep 1992 e: tina.hutchinson@nhs.net

### SOUTH WEST

Kate Moss Physiotherapy Department Cirencester Hospital Gloucester GL7 1UY t: 01285 884536 e: katy.moss@glos.nhs.uk

### SURREY & BORDERS Brigitt Bailey

Physiotherapy Department Wokingham Community Hospital Heathside Road Woking Surrey GU22 7HS t: 01483 846346 e: brigitt.bailey@shawpct.nhs.uk

### **SUSSEX**

Clare Hall Physiotherapy Department Conquest Hospital The Ridge St Leonards-on-Sea East Sussex TN37 7RD t: 01424 755255 ext 6435 e: clarelhall@btinternet.com

### WESSEX

Mary Vincent t: 02380 825050 e: mary.vincent@scpct.nhs.uk

### WEST MIDLANDS

Fiona Wallace

Physiotherapy Ward 23 Birmingham Heartlands Hospital Bordesley Green East Birmingham B9 5SS t: 0121 4242867 e: Fiona.Wallace@heartofengland. nhs.uk

### YORKSHIRE

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

### Syn'apse

### Administrator Louise Dunthorne

Editorial Advisory Committee Members of ACPIN executive and national committees as required. Design kwgraphicdesign t & f: 44 (0) 1395 263677 e: kw@kwgraphicdesign.co.uk

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### Address for correspondence

Louise Dunthorne Synapse Administrator Manor Farm Barn, Manor Road, Clopton, Woodbridge Suffolk IP13 6SH e: louise@peterdunthorne.com t: 44 (0)1473 738421

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