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ASSOCIATION OF CHARTERED PHYSIOTHERAPISTS INTERESTED IN NEUROLOGY

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Syn'apse

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

- Does change in alignment of the foot and ankle influence single leg stance?
- Use of lycra compression suit for relief of a painful hemiplegic shoulder three years post stroke
- Retraining of hemiplegic upper limb using the movement sciences approach
- Stand and deliver! How the use of an Oswestry standing frame improved sitting balance and function in a case of secondary progressive MS

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ACPIN'S AIMS

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

From the Chair

Nicola Hancock BSc (Hons) MCSP SRP
ACPIN Chairperson

Hello and welcome to the Autumn/ Winter 2005 edition of *Synapse*.

The end of a year always provides timely opportunities for reflection on previous months and planning for the coming year. If ACPIN's activity in 2005 can be taken as a useful indicator, my reflections lead me to the very encouraging but tentative conclusion that neurological rehabilitation may finally be achieving something of the recognition that we therapists have long known it deserves. I am sure this is largely because as a specialist field neurology appears to be populated with researchers, educators and clinicians all enormously dedicated and (over) committed to the pursuit of excellence in all aspects of this area of health care. In my role as ACPIN Chair in the past eighteen months I am honoured to have met many such individuals.

The Executive and National Committee members continue to work hard on your behalf to ensure our representation on many groups and working parties alongside their usual ACPIN roles. As you are aware, we were closely involved with the development of the NSF Long Term Conditions and hope to maintain an influential standing throughout all stages of the implementation of the ten-year plan. The profile and momentum of this important document must be sustained as must the role of neurological therapists as decision-makers and implementers of positive change throughout the process. We are also continuing with representation on the Intercollegiate Stroke Working Party at the Royal College of Physicians and our next goal as part of this group is to publish a new set of Physiotherapy Specific Guidelines very soon, alongside AGILE and the CSP. I am also pleased to report that one Executive Committee member will be sitting on the Congress Planning Team for 2006 at the CSP and another member is active in the CSP's Research Network. Other Groups with which we are having fruitful professional relationships including the UK Stroke Forum and the UK Adult Spasticity Forum (see page32)

Our next major event will be our Silver Jubilee Residential Conference and AGM on March 17th and 18th 2006, back at the Hilton Hotel, Northampton. This two day event is entitled 'Stroke: past, present and future' and we have already confirmed a number of national and international speakers, including Prof Shirley Stockmeyer from the USA who will open as our keynote speaker and will be lecturing throughout the Friday morning. More about her work in the President's Address in this issue. This conference promises to be a fantastic event, with not only an excellent academic programme but a conference dinner on Friday evening and time to enjoy the hotel leisure facilities. I hope many of you will join us. Application forms will be available in December and, of course, I recommend early booking!

The Executive Committee have had lengthy discussion recently about the current ACPIN documents, particularly the splinting and manual handling guidance. After a well informed debate, we have decided not to re-publish these two booklets. It is felt that most Trusts now have their own Trust-specific documents in place and both areas of practice are evolving and changing so rapidly that new documents may well be practically obsolete by the time they could be published. It should also be recognised that the time and financial commitment required from volunteers to undertake this project would be enormous.

Membership continues to thrive – we are up to just over 1,200 members for 2005, easily matching last year's total. Don't forget to fill in your new membership form in this edition and feel free to copy it for colleagues who may wish to become new members. The form can also be downloaded from www.acpin.net. Unfortunately some regional groups are experiencing low attendance at regional meetings. I appreciate how difficult it is to travel long distances for meetings, particularly for those of us who live in regions with a large geographical spread. It is inevitable that, with 18 regional ACPIN groups, there will be travelling involved for many of you to attend 'local' meetings. However, all groups are reliant on your support and, as is ever my plea, please do try to have an active role within your region if at all possible.

I hope that you are all finding the website more regularly updated. As promised, we now have a more streamlined system for this and whilst it is still not perfect, improvements should have been apparent!

Finally, I hope that the upheaval of *Agenda for Change* has not given those of you employed by the NHS too much stress and that you find yourselves in appropriate bandings for the jobs you do. I was slightly saddened to see the map of the UK in *Frontline* recently (August 3rd 2005, Vol 11 no 15) showing only three consultant level therapy posts in Neurology/Stroke across the country. I know this is not due to lack of expertise and knowledge in other regions but is, predictably, likely to be down to poor resourcing by Strategic Health Authorities, many of whom have yet to introduce any such posts at all. With my usual optimism, however, at least we can safely say that the numbers can surely only go up!

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Clinical outcomes: providing and using the evidence in neurological rehabilitation

Sue Mawson MCSP BSc (Hon) PhD
ACPIN President

In 1989 an article was published in *Geriatric Medicine* entitled 'Measurement and the future of rehabilitation'. In the article the author Professor Raymond Tallis quoting evidence published by the King's Fund Consensus Forum on stroke management stated, 'Rehabilitation varies widely, mainly reflecting differences in resources but also widely reflecting different beliefs. There is no absolute proof that individuals or collective services benefit patients.'

Professor Tallis posed the question, 'Should rehabilitation be abandoned?' Taking this further in the Marjory Warren Lecture (1988, published 1989), Tallis suggested,

'The threat is that our administrators, seeking desperately to make cuts without scandal, may see labour-intensive, revenue intensive therapies for which there is little carefully documented evidence of benefit as a soft target.'

As a novice researcher and neuro clinician it was this statement that stimulated my desire to provide evidence of effective intervention and so began my search for evidence underpinning neurological rehabilitation.

Some of you around the country will notice that the title of this address is also the title of my MSc module at Sheffield Hallam University, not because I'm advertising the module but because this is to be my presidential theme as it has become my life's work. Over the next few editions of *Synapse,* in the 'Focus on…' section, I intend to write a series of articles about 'evidences' and how we provide and use 'evidence' to demonstrate our clinical effectiveness.

This month I will look at what evidence actually is in a healthcare environment, how we classify evidence, the inherent problems with the evidence hierarchy and how we try to use probability statistics to quantify the strength of evidence provided by a research study. I will also be considering other forms of clinical effectiveness activities that are undertaken to generate evidence that is of local relevance to inform the development of high quality health care practice and service delivery. Furthermore I will suggest ways of using probability statistics within a service evaluation to provide evidence of random change.

This initial discussion around quantifying evidence will inevitably lead to a debate around the most appropriate research design for complex interventions and indeed for complex pathologies such as multiple sclerosis, head injury and stroke to name but a few. Numerous authors (Ernst 1990, Dombovy et al 1986) have stated that the randomised controlled trial is the only 'scientific' way of providing evidence of effective intervention, however others have suggested that rehabilitation research is more complex and less suitable for such research methodologies (Andrews 1991). In the words of Mant (1999),

'the paradox of the clinical trial is that it is the best way to assess whether an intervention works, but is arguably the worst way to assess who will benefit from it.' Simms (1994) similarly identified a methodological issue pertaining to the averaging of patient outcomes into group means thereby loosing the ability to estimate the effects on the individual. My second 'Focus on…' article will therefore be about this thorny issue, central tendency (the use of mean group response to interventions) versus variance (investigation of the individuals response to interventions).

Finally in order to be able to interpret evidence provided by both research and service evaluations it is necessary to understand the theories of measurement. This article will explore the concepts of a unit of measurement, establishing the characteristics of different scales and identifying the significance of these characteristics when the scales are used to measure clinical outcomes. I will also consider the dangers of misappropriate mathematical analysis of ordinal scales such as the Barthel Index, frequently analysed as if it were an interval scale (*Tennent, 1998*). This will inevitably lead to a discussion about the difference between statistical significance and clinical significance. Does the measurement tool provide knowledge about one aspect of the patient out of context of the real life of the patient? Does the data collection method and the data analysis provide knowledge about the patient population or the patient as an individual? In the final article for 'Focus on…' I shall be examining some of these issues and trying to provide answers to these frequently asked questions.

With all this in mind it is very fitting therefore that we, as an executive committee, have been successful in arranging for Professor Shirley Strockmyer to deliver one of the key note lectures at our Jubilee Conference in March 2006. Shirley is a personal friend who I first met in 1998 when she came to the UK to teach neuroanatomy and physiology on our neurological rehabilitation MSc module. We had, as a course team, been struggling for some time to find our way through the maze of motor control theories in an attempt at trying to understand the model of motor control that explained both our intervention strategies and the clinical signs exhibited by our patients. Shirley classified the theories of motor control into the developmental theories and the acquisition theories suggesting that what we required was what she called the 'here and now' theory of 'posture and movement'. How do we control our trunk and limb movements in a tennis game today, why does our stroke patient having difficulty controlling their trunk and limb movement when transferring from sit to stand now?

This new model is based on the work of neuroanatomist Kuypers in which he described the CNS as consisting of a medial and a lateral anatomical structure or systems, the medial system controlling predominantly postural muscle and the lateral system controlling predominantly the movement muscles (Buchwald,1967, Lawrence and Kuypers 1968). Shirley Strockmyer has developed this further by describing the structural and positional characteristics of the postural and movement muscles and how the muscle physiology of the two groups of muscles is significantly different enabling the muscle to perform in an appropriate manner dependent on its function.

As if this new idea of an anatomical basis for neuro rehabilitation strategies was not enough, Shirley, a physiotherapist by profession, went on to describe the clinical signs and symptoms experienced by adults and children who had a neurological disability. She was able to explain to us and to our students why our treatment techniques worked and why we saw changes in posture and movement when we worked for example on inappropriate muscle activity, muscle imbalance or for core stability. She

was also able to give us new insights into the management of brain damage as she unravelled the complexities of abnormal tone.

If you are fortunate enough to be able to attend the Jubilee Conference in March 2006 you won't be disappointed, Shirley is both enlightening and amusing, but most of all her 'posture and movement' model of motor control is based on sound evidence of the structure and organisation of the CNS and the muculoskeletal system. So read on and book early!

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Does change in alignment

of the foot and ankle influence single leg stance? A single case study

Sarah Bradfield

INTRODUCTION

This patient case study aims to identify if treatment to change the alignment of the foot and ankle in relation to the supporting surface improves postural control, tested through the ability to single leg stand (SLS). Painted footprints, to assess the weight bearing contact, time of SLS and need for compensatory supports were used to evaluate the outcome of treatment.

BACKGROUND AND THEORETICAL PRINCIPLES

Effective postural control is the foundation for all movement. Its role is to maintain an aligned body posture and equilibrium (centre of mass (COM) within the base of support (BOS)) to allow attainment of upright stance against the forces of gravity (Massion & Woollacott 2004, Edwards 2002). To achieve this, the central nervous system (CNS) receives information, from the visual, vestibular and somatosensory (proprioceptors, cutaneous and joint receptors) systems, regarding the body's position and movement. It must then integrate and interpret this information to produce the appropriate maintaining or restoring action (Howe & Oldham 1997, 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 the least postural sway and loss of balance (Dickstein, Shupert & Horak 2001, Meyer, Oddsson & De Luca 2004, Shumway-Cook & Woollacott 2001). In all upright postures, ie standing, single leg stance (SLS) and gait, the plantar surface of the foot is the only contact with the supporting surface. It could therefore be hypothesised that if the foot is malaligned in relation to the supporting surface the somatosensory information will be inaccurate leading to changes in postural control.

Periods of SLS occur frequently within many activities of daily living, for example putting on a sock or trousers. Clinically it is often used as a test for balance and is a reliable indicator of falls in the elderly (Tanaka et al 1996). It is thought to be one of the more challenging postural sets as it requires the individual to reorganise their posture to maintain their COM over a much smaller and narrower BOS (Tanaka et al 1996, Shumway-Cook & Woollacott 2001, Riemann, Myers & Lephart 2003). Patients with neurological deficits find it difficult to maintain SLS for the single support phase of gait and for functional tasks, leading to asymmetrical gait patterns (less time in single support on the affected limb (Von Shroeder et al 1995)) and marked compensatory strategies.

Control of upright posture in SLS is mainly accomplished through corrective movements of the ankle joint, ie the ankle strategy (Gauffin & Tropp 1994). If perturbations are bigger or faster than the ankle strategy can cope with the hip strategy or stepping strategy may be recruited to ensure COM stays within BOS (Edwards 2002, Hertel, Gay & Denegar 2002). Efficiency of these strategies is dependent upon full range of movement (ROM) and muscle strength acting upon these joints, alongside accurate sensory information, to ensure the body knows when and which strategy it needs to recruit – components a patient with neurological deficits often lack.

To fully appreciate the impact of foot and ankle alignment on SLS, the movement components of SLS need to first be discussed. In preparation for movement there must first be a feed forward command to recruit anticipatory postural control (Massion & Woollacott 2004). Transference of weight onto the stance limb follows, resulting in an increase in pressure under one foot. The body responds to this increase in pressure by increasing the tone in the extensor muscles on that side through excitation of the medial reticulospinal tract (Howe & Oldham 1997, Cohen 1993). The pelvis laterally tilts to free up the non-weight bearing limb and the hip abductors stabilise the pelvis as the non-weight bearing limb lifts from the floor. Coupled with this lateral tilt the pelvis externally rotates slightly, transmitting this rotatory force down the leg to the foot. As the foot is fixed to the ground it has a supinatory affect on the subtalar joint (STJ) which consequently locks the midtarsal joint (MTJ) and stabilises the forefoot against the supporting surface (Wernick & Volpe 1996).

Efficient transfer of weight from one leg to the other is largely dependent upon the ability of the foot to respond and adjust effectively to the BOS through activation of ankle and foot intrinsic musculature. Lack of ROM or muscle activity at the foot and ankle can dramatically affect a person's ability to balance (Edwards 2002, Cohen 1993). It can therefore be seen that the ankle and foot are key components to gaining successful and efficient SLS.

Many pathological or compensatory strategies may cause a change in foot and ankle alignment. These

include decreased postural control; proximally driven abnormal postures, such as lower limb extensor patterning; changes in muscle tone, muscle length and ROM locally to the foot joints, foot arches or ankle joint, or more proximally throughout the limb; sensory deficits leading to alterations in posture; and pain. However, whatever the cause of malalignment the outcome will always be the same: a change in afferent feedback from the somatosensory system and poor access to the ankle strategy, impacting on postural control (Snell 2004, Cobb et al 2004, Hertel, Gay & Denegar 2002).

CASE DETAILS

The purpose of this study was to investigate the efficacy of treatment interventions in altering the alignment of the foot and ankle and this affect on SLS. A patient was chosen who had altered alignment of his foot and ankle to the supporting surface, impacting on his ability to SLS. Written consent was obtained from the patient. Treatment sessions lasted approximately 45 minutes, three times a week for two weeks.

MEASUREMENTS

In order to measure foot and ankle alignment with the supporting surface, painted footprints were taken in the SLS position. This technique gives an accurate, reliable and permanent image of the weight bearing contact of the plantar surface of the foot with the floor, which otherwise could not be observed without the use of 'high tech' and expensive equipment (Snell 2004). This image can then be analysed to provide hypotheses regarding the impact of foot and ankle alignment on weight-bearing contact with the floor. Although it is a time consuming and somewhat messy technique, in the absence of expensive technology it is a cheap and effective tool.

Examples of painted footprints in a normal model are pictured in *Figure 1* to enable comparisons with the patient's footprints. Contact with the ground can be seen through the heel, lateral margin of the foot, pad under metatarsal heads and pads of distal phalanges. The medial margin of the foot, from heel to first metatarsal head, is arched above the floor because of the important medial longitudinal arch.

The ability to SLS was evaluated by the need for compensatory strategies such as UL support or stand by assistance, and the time able to maintain this posture where appropriate. Photographs were also taken in this posture before and after treatment to demonstrate postural alignment, the need for compensatory strategies and progress within treatment.

PATIENT DETAILS

Mr A is a 63 year old gentleman who suffered a cerebral vascular accident (CVA) on 14th March 2004. CT scan showed extensive right parietal ischaemia. Mr A was initially managed on the Stroke Assessment Unit and then transferred to the Young Disabled Unit (YDU) for ongoing rehabilitation on 21st March 2004. On discharge from his in-patient stay Mr A was mobilising with a quad-stick, ankle foot orthosis (AFO) and supervision. He now attends the YDU as a day patient three times a week, where he has progressed to a walking stick but still requires an AFO and supervision.

His relevant past medical history included hyperlipidemia and depression. He is also an ex-smoker. Mr A is married and lives in a house, he was working full time, drove and was independent with all activities of daily living prior to his CVA.

WEIGHT BEARING CONTACT WITH THE FLOOR IN SLS (NORMAL MODEL)

Figure 1

ASSESSMENT

A pre-treatment series of photographs and descriptions will follow of Mr A in standing (*Figure 2*), right SLS (*Figure 3*) and left SLS (*Figure 4*) to aid in the processes of treatment planning, clinical reasoning and evaluation.

GAIT

Mr A was mobilising with a stick, AFO and supervision. His gait pattern however was somewhat asymmetrical, with a large and poorly decelerated left swing through and decreased time spent on left stance phase. An asymmetrical gait pattern is a common problem associated with stroke patients (Von Shroeder et al 1995). Due to the lack of range of movement at his ankle he was not able to achieve any dorsiflexion or anterior translation of the LL over the foot for midstance: this meant his hip flexed, knee hyperextended, trunk flexed and a quick step to on the right, with decreased time spent on left

STANDING

Standing

- Right upper limb (UL) support needed.
- Head side flexed (SF) and rotated to the right.
- Increased effort from facial expression.
- Left shoulder girdle elevated with UL posturing to flexion, medial rotation and pronation.
- Pelvis elevated on right leading to right trunk SF.
- Left hip and pelvis retracted back.
- Weight bearing mainly right lower limb (LL) with left LL abducted and anterior to midline and acting as prop.
- Left LL posture: hip flexed and externally rotated, knee hyperextended with tibial internal rotation and inversion and plantarflexion at the ankle.
- Decreased weight bearing medial margin of foot and great toe.

Figure 2

RIGHT SLS

Right SLS

- Right UL support needed.
- Head flexed, rotated and SF to the right.
- Decreased extension throughout weight bearing side.
- Right foot and ankle overpronated.
- Left side retracted back with decreased selective flexion throughout.
- Increased posturing left foot to inversion and plantarflexion.

Figure 3

LEFT SLS

Left SLS

- Right UL support needed.
- Decreased weight transference to left over foot, with subsequent increased weight bearing right upper limb.
- Left side lacking trunk extension, pelvis and trunk retracted and rotated backwards with hip flexion, hyperextension of knee and plantarflexion/inversion of ankle.
- Decreased foot contact with BOS with decreased weight bearing medial border, due to inversion and great toe, due to extension.
- Interference of left UL to weight transference.
- Falling backwards thus posterior support needed.

Figure 4

stance. The lack of smooth and coordinated relative plantarflexion and dorsiflexion from initial contact through to terminal stance could also be attributed to fixed foot position from the AFO (Lebduska 2001).

Painted footprints were taken in sitting (with LL pattern of flexion to rule out LL extensor posturing driving foot posture) and SLS to assess weight bearing contact with the supporting surface pre-treatment and at the end of the two weeks of treatment (*Figures 5 and 6 overleaf*).

From the assessment findings it was hypothesised that Mr A was unable to gain effective left SLS due to:

- Lack of ROM at his ankle (10° from plantargrade) caused by tightening in gastrocnemius and soleus, leading to a posterior COM in relation to BOS
- Posturing of foot and ankle to inversion/plantarflexion and great toe to extension (leading to joint stiffness) likely due to hypersensitivity medially and sensory deficits laterally, leading to poor interaction of foot to supporting surface
- Poor alignment left hip and knee and a decrease in effective recruitment of selective lower limb extensor activity leading to a decrease in muscle and joint proprioceptive feedback
- Decreased postural stability

WEIGHT BEARING CONTACT WITH THE FLOOR IN SITTING – PRE-TREATMENT

Left foot

- Contact under heel, decreased area of contact under lateral border of foot in comparison to right.
- Decreased contact under pad of medial metatarsal heads and toes, with only lateral two toes contacting floor.

Right foot

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

NB Decrease in pressure under great toe

Figure 5

WEIGHT BEARING CONTACT WITH THE FLOOR IN SLS – PRE-TREATMENT

Left foot

- Increase in contact area throughout. Likely due to foot sliding on floor as move from standing to SLS. Possibly due to foot acting as rigid lever and not adapting to BOS to allow effective weight transference.

Right foot

- Increase in area of lateral border contact of foot with floor.
- Slightly flattened medial arch distally, with increased area of contact under pad of metatarsal heads.
- Possible clawing of toes.

Figure 6

CLINICAL REASONING, TREATMENT AND EVALUATION

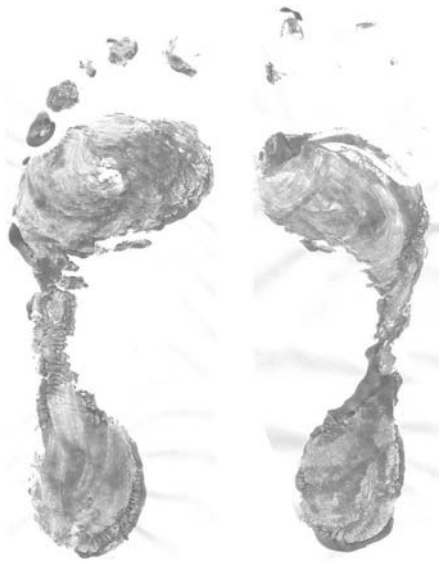
It can be seen from *Figures 4 and 5* that Mr A had an inverted and plantarflexed ankle which led to minimal contact with the floor, therefore altered somatosensory feedback, as well as decreased access to the ankle strategy. Initial treatment therefore focused on desensitising the foot and mobilising the stiff components of the foot and ankle to improve contact with the floor. This mobility was then used to actively increase movement and lengthen muscles, ie through facilitation of sit to stand and stand to sit, where anterior translation of the tibia over the foot occurs, producing dorsiflexion and increased pressure through soles of feet (Edwards, 2002). As this movement improved (plantargrade achieved passively), and to keep the task novel to Mr A, changes in bed height and asymmetrical components were added to increase weight bearing through the left lower limb and increase dorsiflexion range as well as increase the extensor activity through the left side (Edwards 2002). During therapy excellent sit to stand technique with bilateral lower limb involvement and foot orientation to the floor occurred. However outside of therapy the habitual placing of left foot in front of right, although biomechanically no longer necessary, continued. This lack of carryover was felt partly to be due to memory problems therefore Mr A's wife was involved in ensuring carryover at home.

Left foot and ankle alignment had greatly improved allowing the COM to be within the BOS and not behind it and the contact points of foot to floor now being the heel, lateral border of foot and great toe as well as other four toes (*Figures 7 and 8*).

Tanaka et al (1996) studied the pressures under the toes in SLS in healthy subjects and found the greatest pressure to be under the great toe, leading to the conclusion that the great toe, out of all the toes, had the biggest role in maintaining balance in SLS. It is therefore obvious that as Mr A's great toe was not in contact with the surface prior to treatment he was lacking a major component of balance in SLS.

Although foot and ankle alignment to the floor had improved it did not necessarily follow that he had the postural control, extensor activity in the left lower limb or foot and ankle activity to maintain his COM within his BOS or for his foot to be interactive with the

WEIGHT BEARING CONTACT WITH THE FLOOR IN SITTING – POST-TREATMENT



Left foot

- Improved overall contact with floor.
- Contact under all appropriate areas, heel, lateral border of foot, pad under metatarsal heads (laterally and now medially) and toes.
- Slight decrease in contact with great toe but greatly improved to pre-treatment print.

Right foot

- Continued contact under heel, lateral border of foot and pad under metatarsal heads.
- Decreased contact under toes.

Figure 7

WEIGHT BEARING CONTACT WITH THE FLOOR IN SLS – POST-TREATMENT

Left foot

- Contact through heel, lateral border of foot, pad under metatarsal heads and toes.
- Decrease in sliding of foot on floor as move from standing to SLS, therefore likely increase in adaptability to BOS.

Right foot

- Improved contact under toes.
- Increasing contact medial border of foot.

Figure 8

supporting surface. Focus of treatment now moved to these components with preparation of the foot intrinsics, trunk and abdominal activity through facilitation in crook lying, sitting and perch sitting, pre-stand. Once in standing a high plinth was used on Mr A's right hand side partly to give support and confidence and partly as Mr A uses a stick when mobilising. In standing the components of left single leg stance were worked on, initially focusing on true weight transference over left foot and ankle, with COM inside of BOS, not posteriorly. Facilitation of proximal hamstrings and distal quadriceps was given, for lower limb extension, alongside lateral pelvic tilt, to allow unloading and freedom of right leg to step. This was then progressed to step standing postures to allow this improved firing of extensor activity through the left to assist the effective anterior movement of the COM within the BOS, ie gait. Maximal carry over between sessions was ensured by teaching Mrs A the facilitation of Mr A's gait pattern.

From the photographs (*Figures 9 and 10 overleaf*) it can be seen there was a marked improvement in the orientation of the left foot to the floor and the alignment of proximal components, resulting in a more successful SLS.

Mr A's gait pattern also improved allowing a longer time in left stance phase and decreased time in double support phase. He was able to transfer weight anteriorly over his foot which allowed him to recruit the extensor activity for SLS. He is now mobilising without supervision. To see if the overall speed and quality of gait had improved the 10 metre timed walk test and physiological cost index would have been beneficial to use pre and post treatment.

Although the range and mobility of the foot and ankle allowed Mr A to be in better alignment to recruit more proximal activity and gain more accurate somatosensory feedback there remained no activity focally around the foot and ankle. This had a dramatic impact on the recruitment of the ankle strategy for maintenance of equilibrium and also meant that the AFO was still needed to ensure safety and independence. This would obviously impact on the fluency of

Standing

- More upright posture, looking ahead.
- Decreased right UL support.
- Left LL level with right allowing weight bearing.
- Left foot orientated to floor to allow weight bearing.
- Decreased retraction left pelvis and hip but remains slightly retracted with slight hip flexion and hyperextended knee.
- Decreased elevation right pelvis with increased access to right trunk extension. Remains slightly flexed, possibly due to need for right UL support.

Figure 9

Left SLS

- More upright posture, looking ahead.
- Decreased need for posterior support, close guarding only required, therefore weight over foot, not behind.
- Improved weight transference to left with extension through weight bearing side.
- Lateral pelvic tilt and selective flexion through right side.
- Ankle alignment improved with decreased plantarflexion and inversion.
- Much improved orientation of foot to floor with great toe and medial border of heel in contact with floor.

Figure 10

gait, adaptability of the foot to the environment and the somatosensory feedback provided (Lebduska 2001).

CONCLUSIONS AND RECOMMENDATIONS

It can be seen from this case study that improvement in foot and ankle alignment does have a positive influence on the ability to achieve single leg stance (SLS). It was hypothesised at the start of this report that an improvement in ankle and foot alignment to the supporting surface would increase the accuracy of the afferent feedback from the somatosensory system, improve the representation in body schema and therefore achieve improved postural control. Hertel, Gay & Denegar (2002) studied the effects of different foot types: cavus (high arched and associated with excessive rear foot varus), rectus (normal) and planus (flat arched and associated rear foot valgus) on postural control during SLS. Individuals, such as Mr A, with cavus feet demonstrated decreased postural control, due to the smaller BOS for the COM to stay within and the decrease in contact with the floor. This, in turn, reduces the cutaneous receptor information from the sole of the foot. So it could be suggested that improvement of the foot contact to the floor does improve somatosensory information and in turn postural control. However, the question still remains whether this is the only way it improves postural control?

The pressure under the foot has a dramatic influence on proximal activity. With weight transference onto one leg there is a resulting increase in pressure under one foot, this will drive more proximal extensor activity to ensure the weight bearing side is ready to take the body weight (Howe & Oldham 1997). If the foot is not aligned to the floor the CNS will not receive accurate information about the pressure under that foot and therefore not recruit the selective extensor activity needed. This can be seen in the positive support reaction where hypersensitivity of cutaneous receptors of the ball of the foot and intrinsic proprioceptors will drive too much LL extensor activity causing the weight bearing leg to become a rigid pillar (Bobath 1990). It must also be remembered that more proximal components may be driving the foot posture eg LL extensor patterning, and to treat the foot posture alone will not aid the alignment of the LL. However, if the foot posture is ignored inaccurate somatosensory information will be relayed back to the CNS reinforcing this pattern.

For the maintenance of balance in standing or walking the feet need to be able to respond appropriately and adjust to the BOS they are in contact with, whether this be a firm surface or uneven ground. If the foot was a rigid lever it would not be able to achieve this function. The mobility of the foot and ankle is therefore essential for effective postural control (Edwards 2002). Mr. A lacked mobility of his foot and ankle resulting in altered postural control and compensatory strategies. With treatment, the available ROM improved in his foot and ankle. However, it is not just the mobility of the foot and ankle that helps it to adjust to the surface, it is also the activation of the ankle and foot intrinsic musculature that will provide the dynamic stability of the ankle strategy in the frontal and sagittal planes. It was this dynamic stability that Mr. A continued to lack and potentially one of the reasons why he still required UL support to SLS.

Improvement in foot and ankle alignment with the supporting surface, can be seen to improve postural control through increasing the accuracy of somatosensory information, improving mobility to adapt to the BOS, providing dynamic stability to stabilise the foot and improve access to the ankle strategy, as well as driving more proximal components.

Although SLS is a challenging posture that many of our patients do not achieve functionally, it must be argued that treatment should not be applied in a hierarchical way ie achieving sitting before standing, standing before stepping (Kirker et al 2000). This posture, if facilitated, can be used to drive more proximal components which are needed for other postural sets. It must also be remembered that in any of the upright postures the foot is one of the main points of contact with the environment. Any malalignment, if not addressed early on, will only continue to give inaccurate somatosensory information as well as drive more aberant proximal patterning.

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Patricia Davies MCSP, SRP

Use of a lycra compression suit

to relieve painful hemiplegic shoulder three years post stroke

INTRODUCTION

Lycra compression suits have been reported to have been used with children with cerebral palsy, both in Australia and in the USA, with improvement noted in postural stability and functional activities.

In Australia, E Blair et al published 'A Study of a Dynamic Proximal Stability Splint in the Management of Children with Cerebral Palsy', in Developmental Medicine and Child Neurology 1995, volume 77 pp544-554. From three concurrent studies on using lycra splinting with children with cerebral palsy, Blair et al 1995 discovered that the 'UPsuit' improved both postural stability and upper limb movement in patients presenting with shoulder, trunk and pelvic instability.

In the USA, N Hylton and C Allen published 'The Development and use of SPIO lycra compression bracing in children with neuromuscular deficits' in Pediatric Rehabilitation 1997, volume 1, no 2 pp109-116. They used different types of lycra compression bracing in children with neuromotor deficits and sensory problems. It was felt that the children gained an improved base of support for functional gains in balance, dynamic stability and movement control. In this same article, Hylton and Allen suggested stimulation of deep pressure receptors by the compression suit may have a beneficial effect on proprioception and in this way help to improve postural stability.

There is no published evidence on the treatment of adults with neuromotor and sensory problems using lycra suits. However, using the theory that deep pressure stimulation may aid proprioception, based on the published evidence on children, it was felt appropriate to assess and treat a hemiplegic patient with a lycra body suit.

The patient, mostly chairbound, had sustained a right-sided hemiplegia in October 1997. Her cognitive areas had been markedly affected, she was dysphasic and had poor sitting and standing balance. There was little evidence of sensation to light touch on her right side and her main complaint was her extremely painful right shoulder. Due to the cognitive problems, it was felt that the patient would not be able to comply with any active regime of exercises.

The principle behind the treatment with the lycra body suit was to help promote improved postural control and so gain more stability at pelvic and scapula levels and thus hope to relieve some of the shoulder pain.

THE PATIENT

The patient, a 51 year old practising midwife with no previous medical history of note, suffered a left CVA in October 1997. After several weeks on a medical ward with daily therapy, she was transferred to a neurological rehabilitation unit where she received daily physiotherapy and occupational therapy for several months. She was then discharged home to the care of her husband, who had resigned from his job.

In October 2000, after a referral by the GP to the Neurological Rehabilitation Gym for treatment of a very painful right shoulder, the patient was assessed. She was almost entirely chair-bound and was helped in all activities of daily living by her husband. There was a stairlift, a lifting device for the bath, grab rails by the toilet and a ramp at the access door.

She had both expressive and receptive dysphasia and her cognitive areas were profoundly affected; there was little evidence of sensation to light touch on her right side and proprioception was apparently impaired, judging by her lack of attention to positioning of her right arm and leg. Due to the cognitive impairment, it was impossible to fully test the proprioception.

Her sitting balance was markedly asymmetrical, side-flexed, with low tone at the trunk and most of her weight actively supported by her left hip and trunk. The patient gained the standing position by using her left arm and leg; her right foot inverted and very little weight was transferred to this leg.

There was no active movement of the right arm and there was a mixture of tone, showing a subluxed shoulder, yet having a fisted hand. Similarly, in the leg there was generally low tone with high tone around the foot and ankle when upright.

Her husband attempted a daily walk across the living room, but she leaned heavily on him, using her trunk to bring forward her right leg. While she walked her husband had to hold her right arm to try to reduce the pain.

PROCEDURE

After eight treatment sessions trying to promote improved sitting balance and stabilisation of her right scapula, it was felt that there had been no significant change in her level of pain in the shoulder. The pain was still a major presence during the day and also disturbed her sleep at night.

With the help of her husband we did try to draw up an analogue scale from one to ten of pain experienced during various activities. However, on reflection, due to her poor cognition, this was not seen to be a sound measurement.

At this point, a discussion was held with the patient and her husband and a representative from the manufacturing company in order to discuss the principle and check the feasibility of a lycra body suit. In February 2001 body measurements of the patient were taken. A light weight 'Toe-off' splint was fitted on the right foot, to enable more stability of the foot when transferring.

A ten metre timed walk was recorded as 54 seconds. The patient was wearing the splint, using a stick in her left hand and her husband both supported her at her left side and held her right arm to help relieve pain. A video recording was made of the patient wearing the toe-off splint and performing transfers and a timed walk.

Later that month, the lycra suit was fitted and the patient started wearing it for an average of three hours a day. A further video was made of transfers and a timed walk was recorded whilst wearing the suit. The ten metre walk with her husband and wearing both splint and suit was 55 seconds.

Gradually over a period of a month, the suit was worn for an average of five to six hours a day, by which time the right shoulder was pain free in all the usual activities of daily living.

The patient continued to wear the suit for five to six hours a day and a further video recording was made in September 2001. By December, the patient had reduced the wearing time to four to five hours a day with a break at the weekend and with no increase in pain in the shoulder.

By late March 2002, the patient had not been wearing the suit for six weeks. There was no pain in the shoulder and as an added improvement, the patient could walk around the house (wearing the toe-off splint) using a stick and with only stand by help from her husband. A further video recording was made, along with timed transfers and a timed walk.

FINDINGS

After wearing the suit for only a month, the shoulder pain which was the main aim for the treatment had been relieved. Gradually, over the following months, wearing the suit and the toe-off splint, the patient became more confident and started walking with a stick and only stand by help from her husband. Although the final recording of the ten metre walk in March 2002 was 1 minute 30 seconds, longer than the initial test, the patient was almost independent, wearing the splint and using a stick.

Little active physiotherapy treatment was given to the patient after May 2001; she continued to mobilise around her house and also included walking from the house to the car.

Although the speed of transfers did not alter markedly whilst using the splint (*Table 1*), the improvement in transfer time was more obvious when the splint was not used, presumably highlighting the efficacy of the body suit.

MEASUREMENTS OF TIMED TRANSFERS FROM BED TO CHAIR

	Times in seconds	Transfer to left	Transfer to right
15 January 2001	With splint	11	12
	Without splint	22	25
26 February 2001	With splint and suit	11	12
	With suit, no splint	10	12
10 September 2001	With splint and suit	9	12
	With suit, no splint	10	12
27 March 2002	With splint	9	11
	No suit, no splint	10	12

Table 1

It was also noted from the video recordings that the patient had improved sitting balance and less associated reaction with her right arm when walking. At the final assessment, there was still no pain in her shoulder and her improved confidence in walking was demonstrated by the video.

DISCUSSION

The initial aim of the treatment was achieved, that is, the relief of pain in the right shoulder, This was only achieved after the patient had been wearing the suit for about a month. It was felt necessary to pursue the wearing of the suit for about twelve months in total in order to effect a permanent change in posture and stability at pelvis and scapula level if in fact this was the role of the suit.

Joy Edmondson and her team of physiotherapists from the paediatric team in Burnley pursued a study to try and evaluate the effectiveness of lycra suiting with cerebral palsied children (Edmondson et al 1999). As significant results were reported after twelve months wearing of the lycra suit, I chose the same time scale for my patient.

To return to the main aim of treatment – relief of shoulder pain. In order to allow pain free passive movement of the right shoulder, the scapula had to be re-aligned and stabilised. I could perform this passively with relief of pain during a treatment session but this could not be replicated outside treatment sessions. If the scapula could be stabilised outside treatment sessions then perhaps the patient may gain some pain relief. Proximal key points of control are used to give optimal amount of stability or support to promote distal control (Bobath 1964).

I have already mentioned three articles describing the testing of cerebral palsied children with lycra body suits. All these articles seem to indicate that proximal stability was gained in all probability by the pressure exerted by the suit giving information to the deep pressure receptors.

It also has to be highlighted that a toe-off splint was supplied at the same time as the lycra body suit, in order to maintain the safety of the patient when walking. However, this would not affect the sitting posture. The final transfer time without the splint was shown to be less than when first assessed.

CONCLUSION

It was felt that the proximal stability at the scapula, afforded by the lycra suit helped in the relief of pain at the shoulder. As an added bonus, the proximal stability at the pelvis allowed the patient to involve her right hip and knee more actively during walking and gave her more independence.

There were obvious difficulties with this case study, the main one being the poor cognition of the patient. This obviously had an effect on the type of outcome measures used. However, using the positive result from this and also the positive feedback for use with cerebral palsied children, it may be useful to have a study with stroke patients who have sensory and proprioceptive problems. Functional outcome measures could be used, alongside regular testing of both sensation and proprioception.

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Retraining of the hemiplegic upper limb

using the movement sciences approach

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In recent years the Movement Sciences approach to stroke rehabilitation developed by the Australian physiotherapists Janet Carr and Roberta Shepherd, has become increasingly popular. This evidence-based approach focuses on the rehabilitation of movements directly for the performance of a functional task. Activities used emphasise the active participation of the patient, and self-monitored practice.

In rehabilitation of the upper limb, there is a need to teach activities that use the affected arm individually, as well as bilateral activities. This was apparent in the current patient who reported difficulties with writing, a unilateral action, as well as gardening and baking, both bilateral. Therapists have used different rehabilitation strategies for the upper limb over the years, a well established one being the 'hands linked' strategy, where the less affected arm guides the affected one in performance of a task (Eggers 1983). This may be useful for some gross functional movements, but less so for finer tasks. More recent authors, (Blanton and Wolf 1999, Miltner et al 1999) have employed a 'constraint-induced' therapy, constraining the unaffected limb to force use in the affected side. Results of motor function tests improved with this approach, but the use of constraint makes it impossible for patients to carry out bilateral activities. However, evidence is now growing for the use of bilateral treatment programmes, where the two sides carry out an action simultaneously, (Whitall et al 2000, Mudie and Matyas 1996). The former study looked at the use of a bilateral arm trainer with auditory cues, for practice of both simultaneous and alternating movements of the upper limbs, and found improvements in upper extremity motor performance, after just six hours training over six weeks.

AIM OF CASE REPORT

The case study was undertaken as part of an MSc module in the Movement Sciences approach to stroke rehabilitation, and aimed to evaluate the success of the approach using bilateral practice in the upper limb rehabilitation of a stroke patient.

THE SUBJECT

The subject was a retired housewife 'Lydia', aged 62, seen eleven weeks after a left partial anterior circulation stroke, as an outpatient.

She had very little motor deficit in her lower limb at the time of assessment, being mobile unaided with a normal gait pattern, and without balance problems. She was independent with personal care and some domestic tasks, which she had developed her own upper limb compensatory strategies to perform. She reported difficulties with fine motor tasks, eg writing and cooking, and with her hobbies of doing jigsaws, gardening and baking.

OBJECTIVE ASSESSMENT

Observation showed that she had a round-shouldered posture, with the neck flexed, some elevation of the right shoulder with winging of the scapula. The thoracic and lumbar spines were flexed. She held her right arm in a medially rotated position across her body, with a flexed elbow. Sensation to fine touch was found to be intact.

In Movement Sciences, objective assessment involves analysis of functional tasks in relation to normal movement patterns, or 'invariant kinematic features', shown in the table (*Table 1 overleaf*), (Carr and Shepherd 1987, cited in Carr and Shepherd 1998). Causes of deviation, and compensations are also listed. Ranges of movement are then measured as objective markers.

Following assessment, the most salient kinematic deviation is identified. The initial training plan is based on this, (the word training rather than 'treatment' is used in Movement Sciences). For Lydia, this was reduced shoulder forward flexion, caused by weakness of the anterior deltoid. To compensate, a strategy of excessive shoulder elevation using upper trapezius and levator scapulae was used. Excessive abduction during the movement, using the lateral fibres of deltoid was also present. Elbow extension was reduced, with compensatory trunk flexion. The main aim was to improve Lydia's posture and ability in functional tasks using the right upper limb, through the following goals:

1. Increase active shoulder flexion.
2. Increase active shoulder lateral rotation.
3. Increase active elbow extension.

The upper limb sections of the Motor Assessment Scale, (MAS), (Carr et al 1985, Loewen and Anderson 1988) were used as outcome measures to monitor progress along with goniometry to measure ranges of movement. Photographs were also taken of performance of the reach.

INVARIANT KINEMATIC FEATURES OF REACHING FOR AN OBJECT IN FRONT				
Invariant kinematic feature	**Present, decreased or absent**	**Cause of kinematic deviation**	**Compensations**	**Measured ranges of movement**
Shoulder forward flexion	Decreased	Anterior deltoid weakness	Excessive shoulder abduction and elevation	0 – 38° on right 0 – 155° on left
Protraction and lateral rotation of scapula	Decreased	Rotator cuff and serratus anterior weakness	Excessive scapula elevation/retraction	3mm on right 25mm on left
Shoulder lateral rotation	Decreased	Lateral rotator weakness	Trunk lateral flexion	0 - 5° on right 0 – 60° on left
Elbow flexion and extension	Full flexion, decreased extension	Triceps weakness, biceps tightness	Trunk forward flexion	35° off full extension
Forearm supination	Decreased	Biceps tightness	N/A	¾ range (visual analysis)
Wrist extension and radial deviation	Present		N/A	
Abduction and opposition at CMC joint of thumb	Present		N/A	
Extension of MCP joints of fingers with IP joints in some flexion	Present		N/A	
Conjunct rotation of fingers towards thumb	Decreased	Reduced coordination of dorsal and palmar interossei		Not measured

Table 1

INTERVENTIONS

Training sessions of forty minutes duration took place twice weekly, for four weeks with ongoing home practice.

For the first activity, Lydia started with the right arm at her side, elbow flexed to 90°, with her forearm in a mid-prone position, holding a cone. The purpose of the task was to slide the cone forward to a series of coloured markers on the plinth by flexing the shoulder, as shown in the photograph (*Figure 1*).

Figure 1 Unilateral training with cone

In early trials of each activity, manual guidance was given, as recommended by Carr and Shepherd (2003). This consisted of 'hands on' from the therapist to maintain alignment and smoothness of movement. This was withdrawn when the task could be done correctly, usually after three to five repetitions of the movement.

The same task was then practiced bilaterally as shown (*Figure 2*).

Figure 2 Bilateral training with cone

As Lydia was able to reach the further targets, this task was progressed by placing a wooden block 12cm high on top of the plinth, requiring a greater range of movement at the shoulder. Another key component of this approach is variability of practice, which was here provided by asking Lydia to control the speed of the movement.

A home practice activity was commenced using a

Connect 4 set, (MB games), chosen by Lydia. The pieces had to be placed in the grid using a pinch grip, with left and right hands simultaneously (see *Figure 3*).

Figure 3 Bilateral training with *Connect 4*

This task gave its own visual feedback. Lydia could see the pieces falling into the grid and monitor her own practice, which aided learning. It was also functionally relevant, to assist with Lydia's hobby of jigsaws and could be done on surfaces of different heights for variation. Lydia was encouraged to count the number of pieces she could consecutively place in the grid each time, and so built up her stamina.

Measurements were retaken at each session, and the task re-evaluated. After the third session it was felt that reduced elbow extension was the kinematic deviation most affecting the task. This was thought to be due to Lydia's habitual posture with the biceps muscle in a shortened position (Carr and Shepherd 2003). For this reason the next training strategies aimed to work more specifically on active elbow extension.

A task was added, which comprised of moving a ball held in two hands, from one marker to another on the plinth, thereby fully extending the elbows. A sustained biceps stretch was also added for home use.

Lydia's posture was re-evaluated each time. After the sixth session it was noted that she still habitually held her arm in a flexed and medially rotated position. Additionally, improvement in lateral rotation had not been at the same rate as that of shoulder flexion or elbow extension. At this point, a unilateral movement to encourage lateral rotation with a flexed elbow was practiced. It used the same principles of following a line of tape to a target, with the tape positioned to guide lateral rotation movements.

Throughout the eight sessions, training continued using variations of the activities above. Tasks were practiced in a random order as advocated by Hanlon (1996). His study compared two groups of hemiparetic subjects performing a cup placing task in either a 'random' or a 'blocked' way. He found that the use of random practice decreased movement time and increased the number of successful trials, as well as allowing for sustained improvements seven days later. In Lydia's case this style of practice also added to interest and motivation.

RESULTS

Results showed an improvement in all measured movement parameters as detailed in *Table 2* .

Shoulder flexion increased by 58%, from 38° to 60° the majority of this taking place in the early part of treatment, 77% between assessment and day 3. Lateral rotation increased by 250%, from 10° to 35°, mostly in the latter sessions where specific lateral rotation training was done. Elbow extension also increased from -35° to -10° again increasing more later on. MAS scores for upper arm function increased from 1, protraction of the scapula in supine with assistance, to 4, flexion and extension of the elbow for functional use of the arm in sitting. For hand movements, the MAS score increased from 3, pronation and supination of the forearm in sitting, to 5, picking up and moving a cup from one side of the body to the other. These changes in score reflect improvements in both quality and range of movement.

OUTCOME FOR THE PATIENT

Lydia's MAS scores showed small improvements for items 6 and 7, upper arm function and hand movements, of 3 and 2 respectively. Williams et al (2001) studied outcomes for the upper limb following stroke, and found that the median change in MAS scores for these items between admission and discharge from a stroke unit, (mean length of stay 51 days), was 1. Lydia therefore achieved better results than these patients over a shorter time, despite being at a later stage

RESULTS AFTER EIGHT THERAPY SESSIONS

Movement	Initial assessment	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Final assessment
Shoulder flexion	38°	44°	48°	55°	55°	57°	60°	64°	60°
Shoulder lateral rotation	10°	10°	12°	16°	19°	20°	23°	28°	35°
Elbow extension	-35°	-35°	-35°	-32°	-20°	-15°	-15°	-10°	-10°
MAS upper arm function	1	1	1	1	2	2	3	3	4
MAS hand movements	3	3	3	4	4	5	5	5	5

Table 2

when beginning treatment. Lydia reported functional gains in both unilateral and bilateral hand tasks requiring the use of different grips. She had begun to do jigsaws again with help. She had also been able to scrape out the mixing bowl when baking, and to her husband's delight was now independently doing their ironing. Similarly in their series of single case studies Mudie and Matyas (1996), compared unilateral practice of a task, hands linked bilateral practice, and simultaneous performance of the same action by each extremity. They found that the bilateral training resulted in a significant normalisation of the reaching movement patterns.

Figures 4 and *5* below show Lydia carrying out the reaching task on initial and final assessment.

Figure 4 Reaching task on initial assessment

Figure 5 Reaching task on final assessment

There is a clear improvement in Lydia's posture after treatment, and the reaching movement occurs more naturally.

LIMITATIONS

One limitation of the use of this approach is the monitoring of home practice tasks, which were first practiced in therapy sessions. Lydia was very motivated, and cognitively able to carry out these tasks. However, due to the compensatory movements she had developed prior to starting the programme, she may have used some shoulder abduction rather than flexion to perform the *Connect 4* task when not monitored. An element of this is evident in the photograph (*Figure 3*). Self-monitored practice may not be as suitable for patients with memory or cognitive problems. Similarly, if Lydia had had no active shoulder flexion to start with, the home practice would have required an increased hands-on approach, and assistance to set up, eg gravity counterbalanced shoulder flexion in side lying, and may not have been practical.

In the photographs of the initial and final reaching postures the positions of the cup on the table were also slightly different. It is also debatable whether or not moving a cup, rather than drinking from it is a true functional task.

A follow up assessment as used by previous authors would undoubtedly have been of benefit to Lydia, to monitor longer-term effects of the training.

SUMMARY

The methods used in Movement Sciences highlight the importance of specific assessment, with relevance to a functional task, and continual re-evaluation throughout intervention. The utilisation of self-monitored practice could be valuable for functional rehabilitation for many neurological conditions, particularly in the inpatient setting where days are long and therapy time relatively short. This also gives patients motivation, and ownership of their own treatment.

This case also highlighted that not all patients are appropriate for use of this approach. Particularly in the acute stages after stroke, or with sensory deficit, many patients will need more hands-on treatment. The current patient may have used compensatory movements during home practice. Some patients may not have the cognitive abilities or motivation to carry out any independent practice outside of therapy sessions.

The use of outcome measures, encouraged by the Movement Sciences literature highlights the importance for therapists to use objective markers when working with stroke patients. In the current case the MAS proved to be an important evaluative tool, but it may also be appropriate to consider measures incorporating more bilateral functions.

The approach uses varied rehabilitation tasks and environments, which proved to increase motivation and aid motor learning. Perhaps the use of the active word 'training' rather than the more passive term 'treatment' is also a positive step in encouraging therapists to devise more activities for patients to do independently.

Overall this case study has demonstrated the versatility of the Movement Sciences approach for this patient group, and how training can be adapted, as the patient's needs change. The inclusion of this approach in the Royal College of Physicians' *National Clinical Guidelines for Stroke 2004* reflects the need for further research into its clinical application.

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Stand and deliver!

How the use of an Oswestry standing frame improved sitting balance and function in a case of secondary progressive MS

INTRODUCTION

This case report looks at the use of an Oswestry standing frame as an effective way of improving sitting balance and function in a 44 year old lady with secondary progressive multiple sclerosis (MS).

Standing frames have been used for many years in the management of spinal injuries (Tussler D 1998, Walter et al 1999) and cerebral palsy (Green et al, 1993). Studies on the use of standing frames have looked at their effect on bone density (Chad et al 1999) and spasticity (Bohannon RW 1993, Kunkel et al 1993) but no study could be found on the effect of standing on sitting balance or function in MS.

MS is a condition that typically results in progressive disability. One of the most difficult phases to manage is when patients spend the majority of their day in a wheelchair. Many are seen by community physiotherapists who may prescribe exercises. At this stage, however, it is often difficult for patients to perform trunk exercises and balance activities safely or appropriately in standing. Activity is then compromised, leading to secondary weakness and increased disability.

The author has found standing frames very useful in managing this stage of the disease. This case study looks at one patient's outcome over an eighteen month period using the frame. Once maximum strength had been achieved, the Amended Motor Club Assessment score remained the same for a year, an outcome that would not have been expected with a progressive disease like MS.

THE PATIENT

The patient was a 44 years old lady with MS diagnosed in 1992. For the first eight years it was classified as relapsing-remitting but in 2000 the diagnosis became secondary progressive MS. She lived in a bungalow with her husband and two sons. The family reported that she had no apparent cognitive problems.

In 2001 she began to spend 95% of her day in the wheelchair. In January 2003 her function was deteriorating and the neurologist referred her to the author, a physiotherapist at the MS Therapy Centre (part of a national charity formerly known as Action and Research for MS). The patient had no transport so was visited at home, eighteen miles from the Centre. Any physiotherapy programme needed to be limited to things that she could do with minimal intervention, as the charity did not fund home visits.

PROBLEMS IDENTIFIED AT ASSESSMENT

She ranked her problems equally and they were as follows:

- Difficulty sitting unsupported on the edge of the bed.
- Difficulty maintaining balance when transferring from bed to wheelchair and on and off the toilet (she had to do this on her own during the day).
- Difficulty walking with a rollator frame – she walked eight metres to her bedroom each night. Her walking was slow and her posture very flexed.
- Intermittent back pain during the day.

On examination she presented with:

- Weakness of trunk, especially back extensors.
- Spastic paraparesis.
- Weak hip extensors.

INTERVENTION

The aim of using an Oswestry standing frame was to allow the patient to stand, with the lower half of her body supported, so that she could exercise her trunk. The frame was a standard Oswestry frame paid for by donations given to the MS Therapy Centre. The cost of a standard frame was £450.00.

THE METHOD

The family agreed to have the frame in the spare bedroom. The straps were set so that the patient could pull herself up into standing with minimal help from her husband using a Comfylift handling belt. Her husband secured the hip strap. The initial aim was to stand in the frame for a maximum of 30 minutes three times a week. The patient could chose the days and time according to how she felt. She was also advised to stand when someone else was in the house.

A clock was placed nearby so that she could time the stands. Written instructions were given to reinforce the verbal instructions and demonstration. Initially, the stands lasted for a few minutes and she needed to use her arms to maintain balance.

During the first month the physiotherapist telephoned weekly to suggest ways of progressing the balance exercises. After the first month the patient could stand statically without holding on. The physiotherapist then telephoned once a month to make the exercises more challenging, progressing to active trunk exercises.

OUTCOME MEASURES

The following outcome measures were chosen:

- Amended Motor Club Assessment Scale (AMCA) (De Souza LH, Ashburn A 1996)
- Multiple Sclerosis Impact Scale 29 (MSIS-29) (Hobart J et al 2001)
- Sitting balance on the edge of the bed (static – arms resting on lap and dynamic – raising arms forwards to 90°)

The author measured these at baseline (one week before standing began in February 2003), at six months and eighteen months after standing began. All measurements were performed in the morning in an effort to maintain consistency in the results.

The AMCA scale is based on the assessment of three lower limb and ten upper limb activities, sixteen functional movement activities, timed walking over 50 metres and stair climbing. As the scores for the upper and lower limbs were static at each assessment, the scores in the table reflect those gained for the sixteen functional movement activities. The scores are out of a possible 48. The higher the score the greater the level of function.

The MSIS-29 scale has a 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.

The sitting balance test measured the length of time the patient could balance on the side of the bed. The quality was not included in the measurement. For the static sitting test the patient sat on the side of the bed with her hands in her lap. For the dynamic sitting test the patient was asked to raise her arms up to 90°.

RESULTS

The functional activity score of the AMCA scale increased significantly after the first six months and many functional parameters improved. It remained static from August 2003 to August 2004.

The MSIS-29 fell after the first six months showing a subjective improvement but increased in August 2004 showing that the impact of MS on the patient's life had increased at that time. This may have been a reflection of the problems she had at the time finding appropriate transport to the shops during the day.

Sitting balance had improved so that at six and eighteen months she could hold her sitting balance, statically and dynamically, indefinitely.

After the first six months of standing the patient noticed that her function had improved in the following ways and her family substantiated this:

- She could lean forwards from her wheelchair and empty the dishwasher. She had not been able to do this for over a year.
- She could use a perching stool again in the kitchen to prepare meals.
- She could sit on a chair in the shower and wash her hair with two hands rather than holding on to a grab rail with one hand.
- Her posture in walking improved.
- Her backache resolved.
- Her constipation improved.

OUTCOME MEASURES BEFORE AND AFTER STANDING IN THE OSWESTRY FRAME

	February 2003 One week before standing began	**August 2003** Six months after standing began	**August 2004** Eighteen months after standing began
AMCA (functional activity score)	9	22	22
MSIS-29	104	47	58
Sitting balance (seconds)	Static = 60 Dynamic = 0	Static = 60+ Dynamic = 60+	Static = 60+ Dynamic = 60+

Table 1

DISCUSSION AND IMPLICATIONS FOR PRACTICE

There are four important features of this case report:

1. The AMCA scale stayed the same for one year from August 2003 to August 2004 in spite of a secondary progressive diagnosis.
2. The patient remained compliant with the intervention over a long period of time.
3. The subjective impact of MS on her life lessened.
4. Following assessment and patient education the intervention required minimal physiotherapy input and was cost effective.

The first of these points is of interest when considering the management of a progressive disease, that the improvement in function after six months of standing remained static when re-tested one year later. This may imply that a proportion of the disability had been caused by reversible deconditoning.

When lower limb weakness leads to patients spending the majority of their time in a wheelchair, it is inevitable that there will be a reduction in standing and upper body balance activities, leading to a weakening of these muscles. Supported standing in an Oswestry frame appears to have led to an improvement in upper body strength, which in turn improved sitting balance and function. Regular standing led to 'static success' ie that no deterioration occurred over a year in spite of the diagnosis of a progressive disease.

Long-term compliance with any intervention is necessary to achieve goals (Sluijs et al 1993, Overton

1999). The challenge for physiotherapists treating people with MS is to integrate exercise and physical activity into their lives. These are often young people who are trying to balance a chronic, unpredictable and fluctuating disease with a busy family life. Standing gave this patient a sense of being, in her words, 'a normal person again' making it a positive experience and one that she wanted to repeat. The patient had no cognitive impairment, understood the reasons for regular standing and was able to take control of her own programme, which she felt was very empowering. There was also an improvement in the patient's perception of the impact MS had on her life.

The physiotherapeutic intervention was minimal and therefore cost effective. The patient was visited three times in eighteen months and a small number of phone calls were made. The cost of the frame was £450.00 and was paid for by a local charity.

Deterioration during the moderate stage of MS can often be insidious. In the secondary progressive phase it is difficult to distinguish how much is due to primary axonal degeneration or to secondary weakness from deconditioning, compensatory strategies and abnormal movement patterns. The problem of secondary weakness should not be underestimated and in itself can contribute to the burden of disability.

Physiotherapy interventions must be imaginative and tailored to meet the needs and personalities of each patient rather than relying solely on the culture of prescriptive lists of home exercises. There will never be enough physiotherapists to perform 'hands-on' treatment sessions for everyone with MS and we need to explore other ways of empowering and educating patients to keep active and provide them with guided and supported self-management strategies. The Oswestry standing frame may be one way of doing this.

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FOCUS ON
Evidence based practice
is more than a research-based hierarchy

The Department of Health's research strategy (Department of Health 1991) identified the need to ensure that health care practice, service organisation, and delivery is underpinned by a sound evidence-base. Sackett (1996) defines evidence-based practice as being 'the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients'.

In order to try and establish the strength of the evidence the activity undertaken is frequently classified in a hierarchy such as that published by NICE (2004) in *Table 1*.

CLASSIFICATION HIERARCHY FOR DATA COLLECTION METHODS	
Ia	Evidence obtained from systematic review or meta-analysis of Randomised Controlled Trials (RCT's)
Ib	Evidence obtained from at least one RCT
IIa	Evidence obtained from at least one well-designed controlled study without randomisation
IIb	Evidence obtained from at least one other type of well-designed quasi-experimental study
III	Evidence obtained from well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case studies
IV	Evidence obtained from expert committee reports or opinions and/ or clinical experiences of respected authorities

Table 1

However there has been considerable debate over the last decade around the small proportion of treatments that are based on sound scientific evidence (Smith 1991, Grayson 1997) and about the wisdom of basing clinical decisions and practice solely on the findings of quantitative research (Mant 1999, Rolf 1999). Whilst Sackett suggest the importance of the individual patient, the highest level of evidence Ia and Ib, has been provided by a randomised controlled trial, least able to establish the benefit for the individual 'the paradox of the clinical trial is that it is the best way to assess whether an intervention works, but arguably the worst way to assess who will benefit from it.' (Mant 1999).

If much of what we do within the clinical situation lacks a sound evidence base should the practice be abandoned or should we find ways of quantifying and documenting clinical change that we can confidently say is attributable to intervention?

Before considering this possibility it is necessary to define what we actually mean by 'evidence'. Despite extensive searching the only definition to be found was in the dictionary in which it states that evidence is 'data on which to base proof or to establish truth or falsehood' (*The New Collins Concise Dictionary*, 1985).

In the Health and Social Care environment this can be translated into the provision of clinical data (ie the systematic recording of observations of clinical change) on which to base proof of clinical effectiveness. The amount of evidence needs to be quantified in order to be able to judge whether the effect (observed change) is real or a chance (random) occurrence. In a peer reviewed article of a quantitative research project the criteria used to establish this is based on probability statistics. What is the likelihood that if the study were repeated with another random sample from the same population that the results would be the same ie attributable to the intervention? Confidence levels enable the reader to quantify how likely is it that the observed change is due to chance ie random. The smaller the p value ie < 0.05 (95% confidence level) the greater the likelihood that the observed effect is real.

There are inherent problems with basing clinical decisions on specified confidence intervals and indeed on probability statistics. In an article entitled 'Absence of evidence is not evidence of Absence', Bland (1995) suggests the potential flaw in research that identifies significance levels perhaps not appropriate for the research question being asked. Friedman et al (1978) reviewed a series of 71 published papers all with 'negative' results that is defined as having a p value greater than 0.1. Friedman constructed confidence intervals for each study and found that half the studies results were compatible with 50% therapeutic improvement that Altman (1995) suggests may 'reasonably be taken as clinically valuable'. But what about systematic recording of observations in the clinical environment, can this provide evidence of effective and efficient inter-

vention? Are there ways of using probability statistics to show that changes occurring during treatment are not a chance (random) occurrence?

Before answering these questions one must first consider data collection activities, which take place within the NHS. When trying to examine the concept of evidence-based practice it is crucially important to consider all aspects of clinical effectiveness not just those relevant to research activity.

In order to do this the first step is to agree the parameters of each type of activity taking place. The Department of Health, within its framework for research governance, defines research as:

> 'the attempt to derive generalisable new knowledge by addressing clearly defined questions with systematic and rigorous methods' (DoH 2001 p4 section 1.7)

However, this definition requires further clarification. Arguably, audit activities should also employ systematic and rigorous methods to collect and analyse data in order to answer clearly defined clinical questions. It appears that the defining features which distinguish research from these other activities is that research is concerned with generating new knowledge where no current reliable evidence exists and that the knowledge generated through research has application beyond the immediate context in which it is generated (Gerrish and Mawson 2005).

Sheffield Teaching Hospitals Foundation Trust's Clinical Audit and Effectiveness Unit have, for operational purposes, defined clinical audit as the measurement of existing practice against evidence-based clinical standards. It became apparent when developing a 'Toolkit' for Trust employees to make decisions about data collection activities (Somers and Mawson et al 2005) that there were a range of other data collection activities taking place within the Trust and that these activities were neither research nor clinical audit.

The purpose of these activities seemed to be two fold. Firstly there were activities that provided innovative, evidence-based, service and practice developments and secondly there were activity analysis and evaluations of current practices or services. These two phenomena were labelled 'Service Review' activities. Although it was necessary to make a distinction been the two aspects of Service Review, a strong case is made within the Toolkit for a cyclical relationship between service development and evaluation and visa versa. The ultimate outcome of these activities was the provision of data on which to establish clinical effectiveness and efficiency (See *Table 2*).

The case can therefore be made that we need to consider both formal evidence that has been validated by independent scientific scrutiny (research findings) and informal evidence, that which is not validated by independent scientific scrutiny (service evaluations and audit findings). The use of evidence to inform clinical decision-making and clinical practice is based on the

DEFINITIONS OF EVIDENCE USED TO ESTABLISH CLINICAL EFFECTIVENESS AND EFFICIENCY

	DEFINITION
Evidence	'…data *on which to base proof or to establish truth or falsehood*'
Evidence in a Health and Social Care environment	The provision of data (ie the systematic recording of clinically significant observations of change) on which to base proof of clinical effectiveness.
Quantifying evidence	The amount of evidence needs to be quantified: a) to be able to judge whether the effect is real or a chance (random) occurrence using probability statistics; b) to be able to establish the internal and external validity of the findings (hierarchy of evidence (NICE 2004)).
Formal evidence	Is knowledge that has been validated by independent scientific scrutiny. For example textbooks and peer reviewed publications of research reports.
Informal evidence	Is knowledge that has not been validated by independent scientific scrutiny. For example, published research reports, unpublished reports, conference papers, unpublished but shared experiences and consensus expert opinions, data from well designed service evaluations.
Effective	Is the capability of producing a result or outcome such as the achievement of a patient's potential for improvement or the prevention of the patient's deterioration.
Effectiveness	The ability of the health care practitioner, multidisciplinary team or organisation to produce results or outcome, ie extent to which the recovery potential is achieved.
Efficiency	The ability of the health care practitioner, multidisciplinary team or organisation to achieve results or outcome with the minimum use of resources.

Table 2

synthesis of *informal* and *formal* evidence. (See *Table 2*.)

> '… external clinical evidence can inform, but can never replace, individual clinical expertise, and it is this expertise that decides whether the external (formal) evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decisions.'
> (Sackett et al 1996)

To return to the original definition of evidence ' the provision of data on which to base proof of clinical effectiveness' it can be seen that this may come from a variety of activities providing either formal or informal evidence. It can be also be seen that these other activities must be well designed and rigorous methodologically increasing the quality of the evidence provided. In contrast to research, clinical audit and service evaluation activities are undertaken to generate information that is of local relevance to inform the development of high quality health care practice and/or services.

Finally we must return to the question of how to provide evidence or 'proof' of effective intervention if we are going to use informal as well as formal evidence to inform the clinical decision making process. As previously mentioned, in a research study probability statistics are used to judge whether the treatment effect observed is a real or a chance (random) occurrence. If it were possible to use probability statistics within a service evaluation to establish the likelihood of the observed change occurring by chance (randomly) then the evidence provided would be greatly strengthened. Furthermore the evidence would be in a clinical environment with real patients as opposed to a randomised controlled trial (Mant 1999).

In a clinical trial the patient is randomised into one of a number of study 'arms' or groups. The researcher therefore has no way of knowing what the probability of a random change (improvement, no change or deterioration) occuring might be. The probability may therefore be any proportional permutation of one ie ⅓ ⅓ ⅓ = 1. There is no constraint on the possible outcomes because of the initial randomisation. In a clinical trial of physiotherapy intervention subjects are randomised into groups one for example receiving a given treatment protocol the other no treatment. Some patients in the treatment group will benefit from intervention some patients won't. Inclusion and exclusion criteria are used to try and minimise those patients who won't benefit from treatment. The people who will benefit have a greater probability of improving and those who won't benefit have a lower probability of improvement, hence the variance in probabilities.

In a clinical situation the patient is referred to the physiotherapist. A decision has been made, usually by a medical colleague, that the patient has a condition that could benefit from intervention. The physiotherapist assesses the patient and again makes a knowledge-based decision that the patient will benefit from treatment. In this clinical situation the patient has not been randomly allocated to treatment, and the probability of change (improvement, no change or deterioration) is constrained by the previous decision-making processes. This lack of prior randomisation results in the probability of random change being much less variable (Le Roux and Guerling 2004).

With the TELER evaluation method (Mawson 1993, Le Roux 1993, Le Roux 2003, Groscott 1997, Groscott 2001) Le Roux uses probability statistics to provide evidence of effective intervention when he assumes that the probability of a random (improvement, no change or deterioration) is a ⅓ and a ⅓ and a ⅓ = 1. This enables le Roux to calculate the statistical probabilities for individual and groups of TELER indicators. Clinical experience would suggest that this proportional assumption of probabilities may be incorrect. For example a stroke patient with unilateral spatial neglect will not improve in the same way as a patient without neglect. In response to this suggestion Le Roux has calculated a variety of probability permutations demonstrating that the p value always falls within a 95% confidence level ensuring the continued robustness of his initial assumption.

Whilst it might be suggested that statistical significance is of little importance to our patients who are much more likely to want clinical significance demonstrated, this method of evaluating intervention does enable the Health Care Professional to provide evidence that is 'data on which to base proof or to establish truth or Falsehood' (*The New Collins Consise Dictionary*, 1985).

In summary therefore we should not abandon interventions that are not evidence based. Evidence based practice is the synthesis of formal and informal evidence derived from well designed research, audit and service evaluations. It is important however, that we document our interventions and use clinically significant outcome measures that can provide clinically useful data on individual change over time. The ability to calculate the probability of that change being random is the cherry on the cake!

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ACPIN news

A NOTE FROM THE ADMINISTRATOR

Louise Dunthorne

Thank you to all our members who have submitted their projects after completing the three week Normal Movement course. We think they are very valuable contributions to include in *Synapse*, but still need to include a variety of topics and articles from different sources. Therefore we feel it is appropriate to only include one per issue.

If you would like to send your project in for review we do need it to comply with our word count of around 2,500 words, and the other guidelines for case studies mentioned in *Guidelines for authors*.

The CD and two hard copies of each article should be sent to Louise Dunthorne, who will organise for it to be reviewed and the author will be contacted by the reviewers directly about any suggested amendments.

Lastly, I sincerely apologise for any inconvenience caused by my computer problems while we were compiling this edition. There was a considerable time period when I couldn't send or receive mail. Fingers crossed all faults are rectified now!

EVENTS SUBGROUP REPORT

In March ACPIN held another one day course at the Northampton Hilton on 'Pain and Disability', which was very popular and oversubscribed.

This October ACPIN hosted a two day programme at the CSP Conference. The Conference has changed this year from being spread over three days to two days. The topic from ACPIN was 'Cognition and Behaviour: Complex Challenges in Rehabilitation'.

2006 will be ACPIN's silver jubilee year. To reflect this, ACPIN will be holding a two day residential conference in Northampton on 'Stroke: past, present and future'. This is bound to be very popular, so please make sure you book your places early. Details in this issue of Synapse and on the web at: www.acpin.net.

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

CLINICAL PRACTICE AND AUDIT SUBGROUP REPORT

Louise Dunthorne

The group has reviewed and revamped the ACPIN welcome letter, (not before time!) and it should be printed and distributed to you all at the beginning of next year.

As mentioned in the previous Spring edition of *Synapse*, the group have been working on compiling a new feature for *Synapse*. Its aim is to facilitate exchange of ideas and innovative practice between ACPIN members. Any member can contact us about either a model of good practice or an audit they have conducted and found worthwhile, and tell us all about it. It can then be written up and reviewed for publication in *Synapse*.

The questions that the report will follow will be similar to these:

- Can you give a brief summary of the audit / model of good practice?
- What made you initiate it?
- How did you go about it?
- What measurements did you use?
- What resources did you use?
- What did you learn from the whole process?
- How has it changed your practice?

Examples could include any service development projects, or programmes which you feel have been beneficial to patient care.

Please do consider contacting us, as the larger the range of ideas we receive, the more interesting and valuable this feature will be.

If you would like to talk any ideas over, please contact Louise Dunthorne, *Synapse* Co-ordinator, at louise@peterdunthorne.com.

COMMUNICATION SUBGROUP REPORT

Emma Forbes

The Communication Subgroup successfully submitted three motions to ARC 2005. Please read the delegate report from Pam Stanbridge in this issue for an entertaining insight.

The feedback from the delegates was that we need to submit more controversial motions to get them on the primary agenda. Also the CSP seem to be moving away from clinical issues and debating more political issues. Please contact me if you have any burning issues you want the CSP to deal with at ARC 2006.

The sub group have also been updating the regional representative pack and will be available soon in electronic format.

RESEARCH SUBGROUP REPORT SEPTEMBER 2005

Mary Cramp

The research subgroup has been active on several fronts over the past few months. One of the aims of the research subgroup is to advance understanding of aspects of research among the membership. We are continuing to use Synapse as our main means of communication, addressing issues that we think may be of interest to members. We are always interested to hear your views and needs so please contact us if there is an issue you would like us to include.

On the national perspective, there are a number of developments that ACPIN members need to be aware of. Firstly, a National Physiotherapy Research Network, supported by the CSP is being established. The National launch was held in June and plans for the network continue to be developed. Keep your eyes open for news. Secondly, the Department of Health is establishing a Stroke Research Network as part of the UK Clinical Research Collaboration. Launching in September, further details about the Stroke Research Network can be obtained at the following address www.uksrn.ac.uk.

ACPIN and the research subgroup aim to promote and support research activity within the membership. One practical means of doing this is to provide some funds to assist member planning to or currently involved in conducting research. The ACPIN Research Bursary is still running and available to members. The value of the bursary has been increased to £800 and the next deadline is 1st December 2005. Further details can be obtained from Mary Cramp, Honorary Research Officer.

ANNUAL REPRESENTATIVE CONFERENCE 2005

Cardiff

Pam Stanbridge ARC Delegate

I attended my first ARC conference this year in Cardiff. I had first heard about it as a Health and Safety Representative and it seemed that it would be an opportunity to see the grass roots of CSP policy development and how it works.

On this occasion I became involved because as a neurophysio-therapist working in the community I attended the ACPIN conference, and an appeal was made for someone to put forward the following motion;

> '*This conference demands the CSP immediately lobby the government to secure funding for the NHS to provide equal access to neurological rehabilitation follwing discharge from acute services, to end regional discrepancies and existing variations in the provision of patient care.*'
> Motion 45

As this defines my present job and I see the results every day, I felt duty bound to follow it through.

I drove to Cardiff and immediately got lost, (don't use the multimap directions!) but eventually went to a garage in central Cardiff for rescue.

Immediately the maps came out and without buying petrol or even a packet of fruit gums, I was given impeccable directions with a happy smile and directions to come back if I had problems – I didn't. Bonus points for the citizens of Cardiff.

The hotel was located in Cardiff Bay in a converted warehouse, and that evening I met up with several other delegates and had supper in the bar and chatted all evening.

As a first time delegate I knew nobody, but all around me old friends were meeting up and taking new people under their wing: a mix of older and younger, different areas, different specialities, managers and clinicians. An added bonus was the opportunity to eat and drink without having to drive home – a real luxury as I drive everywhere at home.

The next morning I was able to swim for an hour, and then have an excellent breakfast including fruit salad and smoked salmon, before walking to the conference hotel.

The downside was that it was not safe to walk alone to the Thistle Hotel, but our guide was a local who told us about the colourful history of this area of Cardiff – 'a house where rooms could be hired by the hour' – whatever for?!

I was met by Annabelle and Jo, the other ACPIN delegates, before the conference, and then it started.

The conference was held in a large hall with all the delegates seated at the same level, and the top table and speakers facing and raised slightly above. The motion is proposed and then seconded by a member of a different speciality, and then there may be various speakers from the floor, speaking either for or against the motion. The proposer then had a right to reply and then there was a vote.

Motions varied from professional issues – working with the AMP more closely, to review networks and structures for minority groups, to professional practice – expanding outpatient departments to guarantee rapid access to assessment and treatment to allow early return to work.

Concern was shown for the number of new graduates unable to enter the profession as the number of available jobs has not risen proportionately to the increase in university places, and also the need for more placements in all areas of the profession.

There was robust discussion at the suggestion that it should be mandatory for all areas to take students pro rata.

These are only a small example of the many and varied motions before conference – it is worth looking at the agenda to see the variation.

The evening programme started with the Welsh Board reception where the Welsh NHS was compared with the other countries, and also how variation can provoke different changes and take the lead for other areas. This was also pointed out by the Minister for Health and Social Services for Wales, Brian Gibbons, as the Saturday morning speaker.

We then moved into dinner, and then a disco that had all and sundry having an excellent time on the floor.

Some delegates attended an 'Agenda for Change' meeting at 8.00am, and then further motions continued through the day.

Food and accommodation were excellent, and it also gave the opportunity to see a different city and discover the regional differences within the UK.

Unfortunately our motions were never called: they featured on the secondary agenda and time was called before their number was reached. This was unfortunate because of all the work involved in preparation, but also that these will not come forward again unless the whole system is reworked. Perhaps there should be fewer introductions of speakers to allow further business to occur.

I would fully recommend attending the ARC. It is our opportunity to influence the CSP's practice during the following year. It shows the whole of the CSP working together and provides a unique networking forum, to help build a way forward for everyone.

Other news

NEW SOCIETY TO SUPPORT NEUROLOGY IN PRIMARY CARE

A new network has been formed to encourage and support healthcare professionals with an interest in supporting neurology services across primary care. Working in partnership with professional and patient organisations, the Primary Care Neurology Society (P-CNS) plans to offer updates on developments in clinical management and patient care across a range of neurological conditions. With the launch of the new National Service Framework for Long Term Conditions (Neurological) the formation of this new Society is very timely. It is running the second of two conferences this year on the 29th September at the Manchester Conference Centre. For further information about the Society and the conference please visit www.p-cns.org.uk or e-mail info@p-cns.org.uk.

EPCP SPURS
A FOOTBALL CLUB FOR PLAYERS WITH CEREBRAL PALSY

The club is now in its second season and has shown that there is a demand for a club that caters for this specific disability. There are many opportunities for young people with cerebral palsy to play football, with many professional teams supporting these developments through their community programmes.

However, players with cerebral palsy are generally at a disadvantage when playing in mixed or pan-disability teams where their relative lack of mobility restricts their ability to trap, dribble, move to space and pass. Playing against more mobile opposition tends to encourage early and inaccurate passing of the ball.

For players to progress to a high level they need to learn how to play in a cp environment and if they are to play at international level in Paralympic, World and Euro competitions they will also need the physical conditioning that will enable them to play against the current elite of the Ukraine, Russia, Brazil and Iraq. The grading system used for these events ensures that a full range of ambulant players can take part, but they will need to be the fittest and most skilful player for their grading.

Through our partnership with Tottenham Hotspur Football Club we aim to provide quality coaching and access to regional and national squads. The benefits of taking part can be seen in improved levels of fitness and skill, opportunities to take

part in associated events like 'The Grassroots Football Show' at London's ExCel Centre and national athletics competitions. Paul Vickery, a Level 2 FA coach with more severe CP than any of our club members is an inspiration.

With the awarding of the Olympics and Paralympics to London in 2012, taking part as a competitor has become a realistic ambition.

Look at our website EPCPSpurs.co.uk or contact me for more information: Ian Walter, Emerson Park School and Sports College, Wych Elm Road, Wingletye Lane, Hornchurch, Essex, RM11 3AD.
Tel: 01708 475285
Fax: 01708 620963.
Email: info@epcpspurs.co.uk

Other useful contacts:
www.spurs.co.uk
www.disabilityfootball.co.uk
www.cpsports.com
www.londonsportsforum.org.uk
www.thefa.com/England/DisabledTeams/NewsAndFeatures

EPCP Spurs
a football club for players with cerebral palsy

SPASTICITY CONFERENCE SUCCESS

UK Adult Spasticity Physiotherapy Conference, Birmingham April 2005

OVERVIEW

- 76 specialist physiotherapists met to get updated on the progress of the forum over the last 18 months.
- Since last meeting in October 2003 the forum has made tremendous progress.
- Three poster presentations from forum members: Adrian Robertson, Caroline Brown and Sandra Stark were displayed at the international SPASM conference in Newcastle in December 2004.
- The four sub-groups are now established, all of which have well qualified and respected leads.
- Each sub-group has identified a clear timetable of work to do.
- Introduction of community management of spasticity guidelines post stroke.
- Presentation from course leader of the first post graduate BT injection module for physiotherapists anywhere.
- Resource to be made available via interactive CSP website and/or ACPIN website for training opportunities for ESP in neuro-rehabillitation.

It was a great opportunity to share information with peers working in this specialist area. Several excellent and informative presentations were delivered. Sub-group chairs presented progress and plans for the future. Original research in the field was also presented.

RESEARCH SUB-GROUP

The two aims of the research sub-group are:

- To present a review of the available literature to enable the clinician to identify proven benefits and gaps in the evidence regarding Botulinum Toxin administration for spasticity resulting from neurological disorders.
- To identify from current literature the key implications for physiotherapists involved in Botulinum Toxin.

This information will then be used to inform the guide to clinical practice for Botulinum Toxin administration by physiotherapists.

At present we are in the process of developing a Botulinum Toxin article database and in order to contribute much of the validity to guideline development, the relevant literature has had to be identified in a systematic manner using specific criteria for inclusion/exclusion. This database currently stands at approximately 150 articles and is still expanding as the development process continues.

The next step is the critical appraisal of this literature, and in order to ensure rigour and maintain consistency in the appraisal of the literature, the methodology as suggested by Crombie (2004) is to be used by all reviewers. Poor quality studies (significant bias, lack of rigour in the methodological process, inaccurate statistical analysis etc) can therefore be eliminated from the evidence upon which recommendations will be based.

At this moment in time, until we have the articles reviewed, the guidelines group cannot proceed and therefore we require assistance from people who are prepared to be reviewers for some of the articles. If you are interested please e-mail me at the address below.

Toni Power Chair of research sub-group, Head of Programme Physiotherapy (Part time) – York St John College
t.power@yorksj.ac.uk

GUIDELINES SUB-GROUP

Following previous group meetings the need for a guideline for the administration of botulinum toxin by physiotherapists was identified. The working title is: *A guide to clinical practice for physiotherapists involved in botulinum toxin administration*. The guideline will include clinical

reasoning elements related to botulinum toxin administration and specific guidance on administration by physiotherapists.

A guideline development plan has been formulated and reviewed by members of the spasticity forum. A Guideline Development Group is currently being convened. This group will then further review and develop the development plan followed by development of the guideline. Consultation with the CSP is currently underway with the department of clinical effectiveness; their comments on the Guideline Development Plan will be incorporated into the process.

Steve Ashford MCSP
Stephen.Ashford@nwlh.nhs.uk

EXTENDED SCOPE PRACTICE SUBGROUP

Following the last meeting of the forum the ESP group has had detailed discussions with ACPIN. No work of this nature was planned nationally and agreement at regional and national level was to move forward with the aim of exploring the role of ESP on neurological rehabilitation. Our link person with ACPIN is Jo Killeff. The group has identified possible areas of ESP including: running autonomous clinics eg spasticity, complex physical impairment, progressive neurological disease follow up clinics, autonomous referrals to other disciplines, and supplementary prescribing of anti-spasticity medication. Prescribing training should commence in September 2005.

Plans for the future are a scoping exercise with ACPIN to find out what roles physiotherapists are already carrying out.

If you would like to contribute to the work of the ESP group or you are carrying out ESP duties please contact Davina at the following address: dlrichardson@hhnt.org.

PAEDIATRICS SUB-GROUP

Paediatric Btx A conference to be held at CSP September 2005.

Aims

- Provide an update of current practice in physiotherapy management of patients receiving BtxA.
- Questionnaire – current practice.
- Recruit group of interested PT's wishing to input into paediatric subgroup of spasticity forum.

Current roles of Paediatric PT's involved in Spasticity management

- Running autonomous clinics eg, cerebral palsy and other generalised motor disorders, (may include spasticity/dystonia or both).
- Autonomous referrals to other disciplines such as orthopaedic surgeons, neurosurgeons, orthotics etc.
- Botulinum Toxin A Injections (referral & administration).
- Supplementary prescribing of anti-spasticity medications.
- Ordering investigations, eg x-rays.

Update

- Supplementary prescribing
- Link with CSP, Jeanne Hartley (GOSH).
- Consider getting funding from Workforce Development Confederations for training. Will be starting September 2005 possibly.

Action Plan

- Link with other subgroups where there is obvious overlap.
- Guideline development.
- Post on i-CSP to gain a wider participation of paediatric PT's interested in spasticity management.
- Organise a meeting of paediatric sub group following CSP meeting in September 2005 to feed into overlap adult working parties.

NOTE FROM THE CHAIR

Planning for the future, I anticipate the forum delivering the guidelines and the supporting literature review. The extended scope practice group will also deliver their aims of exploring the development of the role of an extended scope practitioner in neurological rehabilitation.

Progressing links with ACPIN are a key objective for the next two years. As the extension of scope of practice is progressing the specific tasks undertaken by the forum will reflect this.

Course leader and participants from the first injection module for physiotherapists injecting botulinum toxin traveled from Coventry to share experiences of the first course.

Spasticity in stroke guidelines were presented and discussed with the group.

FEEDBACK

- All delegates felt the day had met the objectives outlined in the introduction.
- Using a rating scale form 0-5 (disagree strongly to agreeing strongly), scores ranged from 4-5 on all forms.
- The group's strategy is now understood and the number of people that now feel they would like to be have an active part in the group was significantly higher than at the previous meeting.
- Clearly the identification of all four sub-groups and the objectives has been extremely well communicated.
- Feedback using the same scores everyone felt that the presentation on the injection course provided sufficient enough information and that the course was indeed worthwhile.
- Note areas that delegates wish to have incorporated into the course:
  - Emg/Nerve Stimulation,
  - Ultrasound,
  - Dystonia.
- More information on outcomes and measurements of spasticity.
- Seems expensive compared to other current MSc modules
- How to increase accessibility for students – eg Northern Ireland.
- Building Structure For Esp competences in light of sub-group work.
- Other drug management – including oral
- All delegates had sufficient enough information following the community management and a few commented that this is fundamental to their work.

Views discussed in the conference content were that of the UK Adult Spasticity Physiotherapy Forum which was organised and sponsored by Allergan UK.

Contact Details

Anyone interested in the work of the forum please contact forum chair at: adrian.robertson@midyorks.nhs.uk.

UPDATE FROM THE CSP

The CSP will be launching a new version of its extensive and widely used www.csp.org.uk, in mid-September.

The new site aims to give users faster access to relevant content through better organisation and signposting of information, as well as more powerful search tools and a clearer, more accessible design.

On almost every page, users will find not just the content they were looking for, but also a list of related, relevant news items and publications, making trips to the site more worthwhile.

The website is one part of the CSP's wider online project that will also deliver a staff intranet and a full version of the successfully piloted interactiveCSP community site. All three sites will share information behind the scenes, making a very powerful tool for staff and members to share their knowledge.

Research forum

The research subgroup has been active on several fronts over the past few months. One of the aims of the research subgroup is to advance understanding of aspects of research among the membership. We are continuing to use *Synapse* as our main means of communication, addressing topics that we think may be of interest to members. This issue of *Synapse*, we are taking a users view of literature searching and highlighting some of the snags of databases. We are always interested to hear your views and needs, so please contact us if there is a topic you would like us to include.

On the national perspective, there are a number of developments that ACPIN members should be aware of. Firstly, a National Physiotherapy Research Network (NPRN), supported by the CSP is being established. The National launch was held in June and plans for the network continue to be developed. The NPRN is led by Professors Ann Moore, Di Newham, Julius Sims and Maureen Simmonds and the general aims are to develop the physiotherapy scientific knowledge base, provide access to the knowledge base to the physiotherapy profession and like-minded researchers and support the implementation of the knowledge base within physiotherapy practice. Keep your eyes open for news.

Secondly, the Department of Health is establishing a Stroke Research Network (SRN) as part of the UK Clinical Research Collaboration. Launched in September 2005, a consortium from Newcastle University, The Newcastle upon Tyne Hospitals NHS Trust, Birmingham University, Glasgow University, Nottingham University and Oxford University have established the Coordinating Centre for the SRN. The SRN Coordinating Centre is based in the Clinical Research Centre, Newcastle University. The aims of the network are 'to facilitate the conduct of randomised prospective trials and other well-designed studies of stroke, including those for prevention, diagnosis and treatment'. The SRN will be a managed research network mapping onto NHS service networks for stroke care and local research networks will be established in selected areas. Some members involved in stroke care will be directly or indirectly involved. Further information can be obtained from the SRN website www.uksrn.ac.uk).

ACPIN and the research subgroup want to continue to promote and support research activity within the membership. One practical means of doing this is to provide some funds to assist memberships planning to or currently involved in conducting research. The ACPIN Research Bursary is still running and available to members. The value of the bursary has been increased to £800 and the next deadline is 1st December 2005. Further details can be obtained from Mary Cramp, Honorary Research Officer (see www.acpin.net for contact details).

10101010101010101010 STATS NOTE 10101010101010101010

THE RANGE

The RANGE is a simple measure of dispersion used in descriptive statistics. Whilst the mean, mode and median tell us about the central tendency of a set of data, the range tells us information about the spread or variability of that data.

The range is simply the difference between the highest and lowest values in a set of results. For example, if you were analysing the Barthel scores of 12 patients recently discharged from hospital:

2 4 9 12 14 15 16 17 18 19 19 20

The range of this set of results would be 20 - 2 = 18. Since each of the measures of central tendency in a sample like this produce such different values (mean = 13.75, mode = 19 and median = 15.5) the range gives us important additional information about our dataset which can help us to interpret our results more accurately.

However, whilst the range is a useful descriptive measure and gives us a generalised view of the spread of results, it has several disadvantages. Firstly, it relies solely on the extreme values in a dataset and so it can vary a lot between samples. Secondly, with certain datasets it will be dependent upon the size of the sample – in such cases the larger the sample, the further apart the extremes are likely to be. Consequently the information provided by the range gives a limited picture and gives no insight into how the actual scores in a set of results are distributed – for this you need to calculate one of the other measures of dispersion, the standard deviation or the variance (see *Synapse* Spring 2004).

LITERATURE SEARCHING – A USER'S VIEW

In the current climate of evidence based practice and clinical guidelines, the need to be aware of available literature is greater than ever before. In theory, this process seems relatively straight forward, however, for all those who have entered that keyword and come up with 13,679,987 matches, the practice is not so easy!

The aim of any search is to obtain a manageable amount of information without missing anything important. The key to literature searching is organization, discipline, and patience. A great deal of thought needs to go into the process before you go anywhere near that computer.

The first thing to do is formulate your question. It is a good idea to write this down, and then highlight the keywords from this. Consider the population you are interested in, the intervention involved, the comparison group, and the outcome.

Armed with this information it is then worth noting alternative words that may be used for your topic. An example of this is walking, you could also use gait, mobility, or ambulation. Lateral thinking may be needed if you are searching an obscure subject.

You now need to identify your information sources, these can include books, journals, guidelines, expert opinion, and the internet. Your search strategy needs to be modified for each source.

You are now ready to log on and start searching. There are a wide variety of databases available, and a number of search engines. You need to familiarise yourself with the systems available to you, and it is worth looking at a variety of databases to see which is most suitable for your topic area.

Start with your main keyword, and then start adding in your other factors. Consider the use of 'AND' (includes all search terms) or 'OR' (includes any of the search terms) to streamline your search. It is worthwhile having a few known items to screen your search results. If your expected items do not come up, it may be necessary to refine your search. If you have a large number of items try adding limits such as age, timespan, or publication type.

If you come up with very few references, this does not mean there

OVERVIEW OF THE REPRESENTATION OF PHYSIOTHERAPY AND REHABILITATION RELATED TITLES IN FOUR BIBLIOGRAPHIC DATABASES

	DATABASES			
JOURNALS	**AMED**	**CINAHL**	**ISI Science Citations**	**PUBMED**
Archives of Physical Medicine & Rehabilitation	✔	✔	✔	✔
Australian Journal of Physiotherapy	✔	✔	✔	✔
Clinical Rehabilitation	✔	✔	✔	✔
Disability & Rehabilitation	✔	✔	✔	✔
Multiple Sclerosis	✘	✘	✔	✔
Physical Therapy	✔	✔	✔	✔
Physiotherapy	✔	✔	✘	✔
Physiotherapy Canada	✔	✔	✘	✔
Physiotherapy Theory and Practice	✔	✔	✘	✔
Stroke	✔	✔	✔	✔

Table 1

is nothing published on the subject. Try changing the database, include broader search terms, or try another source of information.

Throughout the process you need to save your search strategy, and make a note of your methodology. This allows you to reflect on your strategy and modify it in an organised, systematic way rather than in a random manner.

Once you have a manageable number of references you can start working your way through them. Titles are the quickest way of reviewing lists, but remember that titles can be misleading, abstracts are more informative about content of a paper. Highlight your choices as you go through to produce your final list of useful references. If you are carrying out a number of searches, keep your final lists with your notes to ensure you can look back at them easily. Remember to monitor your lists for duplication, especially if you are paying for full text articles!

You are now ready to convert your lists of references into full articles. Many libraries now offer full text online for certain journals, however, resist the temptation to only read the easily available articles. The more obscure journal can sometimes hold that vital piece of information needed.

Finally, make full use of your local support from libraries or colleagues. Experience in searching, as in any area, can make short work of what is sometimes a daunting task.

Snags of bibliographic databases

Electronic bibliographic databases have advanced significantly since their introduction and many of the early problems associated with bibliographic databases have been minimised. One of the snags of the available databases early on was the poor representation of clinically focused journals, particularly those relevant to physiotherapy. A recent search for selected physiotherapy and rehabilitation related journals in the listed titles of four widely used bibliographic databases (physiotherapy and rehabilitation related) shows that this situation has changed. *Table 1* provides an overview of this search.

There is still a snag and you still need to exercise caution. Many of the available databases appear to have an extensive number of years over which you can search for relevant articles. However, this does not mean that it contains the information for all journals for all years. For example, ISI Science Citations database currently includes details from Clinical Rehabilitation journal from 1997 onwards only. If you are particularly interested in the physiotherapy and rehabilitation journal and you want to conduct an extensive search, it is worth checking on the database what issue numbers/years are included in the database.

The other snag that hasn't really changed is the problem of using the right keywords for the database you are searching. Using American or English spelling or terms can dramatically alter the number of 'hits' you get in your database search. For example, using cerebrovascular accident and cerebral vascular accident in a limited titles search produces a different number of hits and a different set of articles. Some of the databases provide access to a list of terms that it will accept and use. It is well worth spending some time exploring these additional features of the bibliographic database because ultimately it will provide you with better search results.

Cognition and behaviour

complex challenges to rehabilitation

csp congress 2005

ACPIN programme @ CSP Congress 2005

Birmingham Friday 7th & Saturday 8th October

LECTURES 1 AND 2

Ms Anne Brannagan (Lecture 1)
Head Occupational Therapist, DMRC Headley Court

Mr Kit Malia (Lecture 2)
Cognitive Rehabilitation Therapist, DMRC Headley Court

An introduction to cognition *and the implications for physiotherapists*

The RCP/BSRM National clinical guidelines for rehabilitation following acquired brain injury 2003 state that: 'Neuro physiotherapists need to be not only skilled in the physical management of neurological deficits, but also experienced in recognition and handling of associated cognitive and behavioural deficits which may impact on the patient's ability to engage and co-operate in therapy sessions, and to carry over physical gains in daily activities'. This presentation will provide a framework for understanding and recognising cognitive problems following acquired brain injury. It will describe how cognitive problems may impact on physiotherapy practice and outline some techniques that physiotherapists can use in their therapy sessions. Finally, we will explore how cognitive impairments can cause behaviour problems following brain injury and what the physiotherapist can do to minimise these effects

BIOGRAPHIES

Anne Brannagan DipCOT MSc, Head Occupational Therapist, qualified as an Occupational Therapist in 1988 from the London School. She did a two year orthopaedic rotation before specialising in neurorehabilitation at the Defence Medical Rehabilitation Centre, Headley Court. She gained a master's degree from Kings College in 1993. Ms Brannagan has specialised in the cognitive and executive sequelae of acquired brain injury. She runs workshops with Kit Malia, training both professionals working in the field and carers of brain injured individuals around the country. She has lectured on cognition at conferences in the UK, Sweden, Norway, Denmark, Finland, The Netherlands, and the USA. She is currently the membership chair of the Society for Cognitive Rehabilitation and the chair of NANOT, the National Association of Neurological Occupational Therapists. With NANOT, she has been involved in developing clinical standards for Occupational Therapists working in traumatic brain injury.

Kit Malia BED MPhil CPCRT, has a research degree in Neuro-psychology and is the only Certificated Cognitive Rehabilitation Therapist in the UK. He initially trained as a teacher for people with learning disabilities and following a period of teaching, has spent 18 years working as a cognitive rehabilitation therapist with adults with acquired brain injury at the Defence Medical Rehabilitation Centre, Headley Court. He has published scientific papers on cognitive and psychosocial rehabilitation, and clinical standards for brain injury rehabilitation. He is the primary author of the cognitive rehabilitation materials Brainwave-R and is the co-author of the Brain injury workbook with Dr Trevor Powell. Mr Malia has lectured at conferences in the UK, Sweden, Norway, Denmark, Finland, The Netherlands, and the USA. He is on the Board of Directors for the Society for Cognitive Rehabilitation USA, and is chair of the SCR International Division.

LECTURE 3

Ms Fiona Jones
Senior Lecturer, St Georges University London

'No good telling me, I've got to do it myself': *Enabling personal confidence in progress following stroke*

Following stroke there is often a negative description of long term psychosocial sequelae. Depression is reportedly high and can be associated with reduced functional outcome. But against this background there is a recognition that some individuals do successfully develop self-management strategies and continue to make progress. The aim of this presentation is to discuss the utilitisation of methods which can enable effective self-management in the longer term. These ideas originate from findings of a study which tested a stroke self-management intervention on personal confidence, activity and participation and a strong body of empirical evidence on self-management in other chronic diseases.

Biography

Fiona Jones has worked as a physiotherapist in neurorehabilitation for over 20 years. Her research interests in self-efficacy and self-management developed after her experiences in a community post working with individuals at different stages after their stroke. She completed an MSc in Neuroscience in 1997, and this lead to registration for a part time PhD at the University of Brighton in 1999. She has recently completed a series of studies which have explored factors influencing progress after stroke, and developed a stroke self-management intervention for use by individuals and their carers. She hopes to complete her PhD this year. She has been in her current post as a senior lecturer at St Georges University London for three years combining the role of lecturer, researcher and clinician.

LECTURES 4 AND 5

Ms Donna Malley (Lecture 4)
Occupational Therapy Clinical Specialist, Oliver Zangwill Centre

Ms Sue Brentnall (Lecture 5)
Head Occupational Therapist, Oliver Zangwill Centre

Rehabilitation of memory difficulties *following Acquired Brain Injury*

Following acquired brain injury people frequently describe difficulties with learning new information and remembering to do things. These can have a profound impact on progress within rehabilitation and therefore achievement of functional independence. This presentation will provide an overview of memory processes, and review ways in which remembering and new skill learning can be compromised following acquired brain injury. It will consider general learning principles and specific methods of intervention used in the rehabilitation of practical memory difficulties, with particular emphasis on those which can be applied in physiotherapy practice.

BIOGRAPHY

Donna Malley qualified from the London School of Occupational Therapy in 1987. After a year as a Basic Grade on rotation at Charing Cross Hospital she joined the Atkinson Morley Hospital and Wolfson Medical Rehabilitation Centre which specialises in Neurology, Neurosurgery and Neurorehabilitation, until 1992. Following a year in the Child Development Centre at Cambridge, Donna worked for five and half years at Addenbrookes NHS Trust on the Lewin Rehabilitation Unit and in an outreach capacity working with clients who have acquired brain injury. She gained a BSc (Hons) in Health Studies during this time. She joined the Oliver Zangwill team in 1998 and is currently undertaking an MSc in Primary and Community Care at Homerton School of Health Studies.

Sue Brentnall qualified from St Loyes School of Occupational Therapy in 1987. Following a three year physical and psychiatric rotation within East Anglia, she joined the Occupational Therapy Department at Addenbrooke's Hospital, Cambridge, where she worked in the Lewin Rehabilitation Unit. Since 1993 she has dealt purely with clients who have acquired brain injury, running the Regional Occupational Therapy Head Injury Outreach Service based at Addenbrooke's. She has chaired the Regional Occupational Therapy Head Injury Specialist Interest Group during this time. She joined the Oliver Zangwill Centre when it opened in 1996.

LECTURES 6 AND 7

Ms Karen Baker (Lecture 6)
Senior I Physiotherapist, National Hospital for Neurology and Neurosurgery

Ms Sue Humblestone (Lecture 7)
Senior I Occupational Therapist, National Hospital for Neurology and Neurosurgery

Conversion disorder *'unexplained neurological symptoms'*

There are a percentage of patients that present in a neurological setting, that despite thorough investigation are found not to have any organic basis for their symptomology. This presentation discusses the theories and concepts of conversion disorder from its first identification in the seventeenth century through to current day thinking.

Discussion will then focus on treatment approaches for this complex and challenging group of patients with case reports used to illustrate the effectiveness of a goal setting approach at the National Hospital for Neurology and Neurosurgery.

BIOGRAPHY

Karen Baker qualified in 1995 from Leeds Metropolitan and since 1999 has been working within neurosciences. She has experience of acute, post-acute and community settings. Karen has been involved with the National Hospital for Neurology and Neurosurgery since 2000. She has worked with clients with conversion disorders during this period and supervised therapists working in this area. Her present post is Senior 1 at the National working on the neuropsychiatry ward. Karen recently gained a Msc with Distinction in Neurorehabilation from Brunel University.

Sue Humblestone has worked in the field of mental health since 1992, qualifying as an occupational therapist in 1997. She has worked in adult and forensic mental health and for the past four years has been based in neuropsychiatry as the ward based OT on Hughlings Jackson Ward at the National Hospital for neurology and Neurosurgery.

LECTURES 8 AND 9

Ms Katrina Moles (Lecture 8)
Senior 1 Physiotherapist, Previously Royal Hospital for Neurodisability

Miss Natalie Woodman (Lecture 9)
Senior 1 Physiotherapist, Previously Royal Hospital for Neurodisability

The what, why and how *of working with behaviour*

Have you ever heard a patient who was difficult to engage in therapy? Were they 'non-compliant', 'disinterested' or aggressive? Did you wonder whether there was an alternative to punishment and how it could be implemented to achieve change? This lecture will focus on the difficulties physiotherapists may have in enabling individuals to reach their full potential. It will also cover a non-aversive approach to the rehabilitation of individuals with brain injury and behaviour. Therapists will have an enhanced understanding of why clients present with behaviour and how to manage this within a therapy context.

BIOGRAPHY

Katrina Moles is a senior Physiotherapist who qualified in 1995 in New Zealand. She has worked in neurology for nine years across a variety of settings. Until recently, she worked at the Royal Hospital for Neurodisability for five years, three of these as the Senior I on the neurobehavioural unit. During this time, she also worked as a postural management advisor to the rest of the hospital. She has a special interest in the effects of seating on behaviour and has presented on this at two RHN neurobehavioural conferences and the international conference for posture and wheeled mobility. She holds a PGC (Posture management for people with complex disability) and a certificate in rehabilitation engineering. She is member of the CSP, ACPIN and PMG.

Natalie Woodman is a Senior Physiotherapist who graduated in 1995 in Cape Town, South Africa. She has worked in the field of neurology for nine and a half years working with clients with a wide range of neurological conditions particularly spinal injuries, strokes, TBI and other progressive neurological conditions across all settings. She has worked at the Royal Hospital for Neurodisability on the Neurobehavioural Rehabilitation Unit managing clients presenting with positive and negative behaviours for three and a half years. She has good knowledge in special seating and posture management and has a special interest in the role seating plays in the management of behaviour. She has recently presented two papers at an international conference in Dublin, Ireland. She has taught on the Non-physical Interventions in Managing Challenging Behaviour Course at RHN. She is currently enrolled in the post graduate course on Posture and Seating in Complex Disability.

LECTURE 10

Miss Thérèse Jackson
Head Occupational Therapist/Clinical Specialist, Aberdeen Royal Infirmary

Understanding *and treating Apraxia*

Apraxia is a cognitive disorder of motor planning resulting from neurological impairment. It can be one of the more disabling deficits following stroke or brain injury. Apraxia is a complex area of assessment and intervention for the healthcare team. This presentation will clarify the history and development of the current understanding of definitions and assessment, and will describe the emerging body of evidence for interventions for people with apraxia. The application and implications for physiotherapy will be discussed.

BIOGRAPHY

Thérèse Jackson is the Head Occupational Therapist and neuro clinical specialist at Aberdeen Royal Infirmary. She has extensive experience in acute services and in neurorehabilitation and has developed a special interest in the understanding and treatment of apraxia in people with neurological damage. Thérèse has published in the British Journal of Occupational Therapy on the subject of apraxia, and has contributed to two textbooks on stroke and apraxia. She has taught extensively across the UK and has been to St Petersburg, Russia, on three occasions, to work with a healthcare team to develop stroke services there. Thérèse is past chair of the neuro specialist section of the College of Occupational Therapists - NANOT, and is currently the Occupational Therapy representative on the National Advisory Committee for Stroke at the Scottish Executive.

ACPIN
SILVER JUBILEE
RESIDENTIAL CONFERENCE

STROKE

PAST
PRESENT
& FUTURE

Friday and Saturday
17th -18th March 2006

The Hilton Hotel
Collingtree
Northampton

ACPIN will be presenting this exciting, not to be missed residential conference in their silver jubilee year and are welcoming a number of highly reknowned international speakers to their conference programme.

Our keynote speaker is **Professor Shirley Stockmeyer** from the USA. Also featured are **Dr Gert Kwakkal** from the Netherlands, **Dr Pam Enderby**, **Dr Tony Rudd** from the RCP and other eminent professionals in this field.

Topics to be addressed include Current Theory and Neurophysiology in Stroke, Clinical Implications of Hemiplegia, Community Based Stroke Services and Key Messages from the RCP Stroke Guidelines, amongst others.

See *Frontline* or go to ***www.acpin.net*** for applications and further details, from November 2005.

SILVER 25 JUBILEE ACPIN

www.acpin.net

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.

LINKING EVIDENCE TO CLINICAL PRACTICE

London ACPIN study day
18th June 2005
St George's Medical School in Tooting, South London
Speakers: Professor Val Pomeroy, Professor of Rehabilitation and Ageing, St George's Medical School, University of London; Emma Cooke, Research Physiotherapist and Catherine Donaldson, Research Physiotherapist

Review by: **Sandy Chambers**, Clinical Specialist Neurology, and Megan Campbell, Senior 1 Neurology, St Thomas' Hospital, London

The opening lecture 'Potential bias in evidence based practice' was presented by Professor Pomeroy and was a practical, clear discussion of today's realities for translating research into evidenced-based practice, using neurorehabilitation as an example. In the context of the ever-increasing capacity for physiotherapy research, we were reminded that evidence cannot replace clinical judgment and expertise. The discussion included a thorough review of the classifications of levels of clinical evidence and the need to build a sound, coherent body of work beginning with preclinical (theoretical stage) and phase 1 (modelling) studies. Exploratory (phase 2), RCT's (phase 3) and long-term implementation studies (phase 4) are part of the long process of bringing evidence fully into the clinical and public health domain. Other points raised included various methods of assessing the quality of research and how bias enters all phases of the research pathway. Finally, Professor Pomeroy left us with a welcome set of helpful sources from which to find the best evidence now.

Emma Cooke and Catherine Donaldson, research physiotherapists, presented the second lecture on 'Developing Robust Research Methodologies' which focused first on the dilemma of research into 'conventional' or every-day clinical practice in neurophysiotherapy. They described the rationale and procedures they have been using in their research to establish user-friendly treatment schedules that allow the reliable and valid description of practice in today's clinical setting. Secondly, they discussed the need to find agreed methods to categorise and stratify subjects in clinical trials to focus on what was intervention-based change for which subgroups of patients vs what was natural recovery and likely to happen no matter what the intervention. Lastly, the speakers highlighted the importance of using valid and reliable outcome measures, available now, to measure change effectively.

In the second half of the programme, each speaker presented an aspect of their own research for purposes of highlighting the practical, everyday problems and successes encountered in rehabilitation research. Cathy Donaldson discussed her work on 'The effects of standardised physical therapy and functional strength training on upper limb function and neuromuscular weakness after stroke: a pilot study. This pilot work will be 30 subjects with upper limb problems after stroke and has nearly finished testing the Treatment Schedule tool. Emma Cook told us a bit about her project, 'The effects of intensity and type of physiotherapy intervention on lower limb strength and function after stroke.' A much larger study group, this project is well on its way to recruiting patients and using the Treatment Schedule designed and tested by Emma. Finally, Professor Pomeroy summarised her work on 'The effects of transcranial magnetic stimulation and voluntary muscle contraction on corticospinal transmission and upper limb motor recovery after stroke. An exploratory trial'. This was an interesting view on how a potentially useful physiologically-based treatment is difficult to test and may not prove as promising as expected.

Overall, we found the course to be well attended, stimulating and informative. The topics and presentations worked well individually, and as a themed group, to highlight important aspects of putting evidence into clinical practice. There was practical information for evaluating research as well as thoughtful suggestions for how to think critically about current evidence in practice and future research directions.

VESTIBULAR REHABILITATION A NEUROLOGICAL PERSPECTIVE

Study day 3rd November 2004
Broadgreen Hospital, Liverpool
Tutor: Pam Mulholland

Review by J**o Jones**, Senior Physiotherapist and Lyn Roxburgh, Clinical Specialist, Royal Liverpool and Broadgreen University Hospitals Trust

Pam Mulholland is both a Bobath tutor and Superintendent Physiotherapist at the Royal Preston Hospital. In June 2003 Merseyside ACPIN were fortunate to secure Pam to facilitate a one day course on Vestibular Rehabilitation which was heavily oversubscribed and which proved to be extremely well received. As a result, we were delighted when Pam agreed to return in November of last year to run the course again. Once again the 20 places were rapidly filled with participants from a mixed clinical background, including musculoskeletal.

The learning objectives of the study day were:

- To review the neuroanatomy of the Vestibular System and its role in Postural Control.
- To explore aspects of Vestibular Dysfunction and the role of Vestibular Rehabilitation in treatment.
- To demonstrate the application of the principles practically.

The study day comprised of a lecture, practical sessions and a patient demonstration. A handout provided a comprehensive evidence base, and reference material, and was positively received by the participants.

The lecture explored the Vestibular System from a 'form and function' perspective, covering relevant physiology, function and dysfunction. The subsequent practical sessions and patient demonstration provided an opportunity to apply this theory to clinical practice and generated lively discussion.

Participants fed back that the course was 'comprehensive, informative and well presented', with 'a good balance of practical and theoretical elements'. The patient demonstration was 'stimulating' and all agreed that both this and the practical sessions had provided them with new and innovative treatment ideas.

In conclusion, this was an excellent, worthwhile course which provided food for thought.

Regional reports

KENT

Lisa White
Regional Representative

Following our AGM in March there has been an increase in committee members to nine people, which is beginning to make events easier to organise.

Professor John Rothwell and Dr Penelope Tanelli took a study day at the beginning of July on the cerebellum and basal ganglia focusing on Plasticity and Reorganisation in relation to rehabilitation. This was a fascinating and thought provoking day and was well attended. We would like to take this opportunity to thank them both again for coming to Kent.

Our next study day is on the 18th October and is planned to focus on the lower limb and gait. The day will comprise a selection of lectures including biomechanics, FES and treadmill training. Fliers and application forms will be sent out to Kent members nearer the time.

We have a selection of other study days in the pipeline and we will confirm details of those closer to the time.

As I am now moving out of the area I am handing the Regional Representative baton back to Janice Champion and would like to thank her again for agreeing to take on the role.

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. Feedback from our changed format this year has been very positive – largely due to the efforts of our invited presenters and the hard work of Committee members.

By the time you receive your autumn *Synapse* we will have had the last two courses for 2005. In June we heard about 'Linking Evidence to Clinical Practice' from Professor Val Pomeroy and two of the research physiotherapists in her laboratory, Cathy Donaldson and Emma Cook. (please see the course review on page 40 in this issue). In September, we will have heard from Paul Charlton, Richard Sealy and Gita Ramdharry in presentations on 'Orthotic management of gait and the lower limbs in the neurologically impaired adult'. Both courses were organised with great thought from all involved and have made a successful effort to tackle important clinical and research issues.

We are now organising the schedule for next year's courses and would welcome ideas and suggestions for topics and speakers that YOU would like to have available in the London Region. Your voice in shaping the format and content of the programme presentations is very important. Please feel free to contact myself or any of the committee members to share your ideas.

Your London Region committee has changed and grown in the last six months and I would like to welcome our new members. Gita Ramdharry, based at the National Hospital for Neurology and Neurosurgery and Caroline Bullock, based at the Wellington Hospital.

Best wishes to you all for the remainder of 2005.

MANCHESTER

Nina Smith
Regional Representative

There has been a change in chair this year: many thanks to Sue Pattison for her hard work and good luck to Jane Leicester as she takes the role into the future.

Attendance at evening lectures has fluctuated so far this year; numbers were particularly low at the AGM (despite an informative positioning products demonstration).

Programme for the remainder of 2005

- September and October *Biomechanics of Gait and treadmill walking* – lecture and research presentation.
- November *Biomechanics of gait and treadmill walking* – patient demonstration.

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.

The committee will be planning next year's timetable from September, so any feedback and new ideas would be extremely welcome – feel free to contact us!

MERSEYSIDE

Jo Jones
Regional Representative

I am pleased to report that Merseyside's membership now stands at 47 – a far healthier figure than that quoted in the Spring edition – no doubt helped along the way by the committee's conscious (and cunning) decision to make our courses significantly cheaper for members! With respect to committee numbers, the '10 little indians' phenomenon (*Synapse*, Spring 2005!) appeared to be persisting with our secretary Amanda Stiles' departure to become a mum – congratulations on the birth of Marcus – and the recent resignation of chair Emily Gerrans due to increasing work commitments, and then there were seven! But all was not lost, we were extremely pleased to welcome Sarah Goulding to the ranks and are on a mission to 'encourage' others to follow suit (as no doubt anyone who knows/works with/has even the most tenuous connection with, a committee member will have realised!). Many, many thanks to both Amanda and Emily for all their hard work and for keeping us all on track – no mean feat at times – not quite sure who's going to take over that mantle now!

Our AGM and workshop in March was once again very popular, undoubtedly due to the fact that the workshop was facilitated by Sharon Williams and not, *per se*, our members' burning desire to attend the AGM! We are, as ever, indebted to Sharon for her continuing support. The Advanced Splinting Course held in May was surprisingly undersubscribed, however those who were fortunate to attend fed back that it had been a very worthwhile day which generated lively discussion – many thanks Sue. In June we held a very informative evening lecture on current developments in MS with the team from The Walton Centre (Michele Ennis – Specialist OT, Fiona Lynch – MS Nurse, Dr Carolyn Young – Consultant) providing a multidisciplinary perspective.

Programme for the remainder of 2005

- September 23rd-24th *Basic Splinting* Sue Edwards.
- November *Two day FES course* with Christine Singleton and Jenny Thain.

Our 2006 programme is still in the planning stages, ideas include, a study day on Paraplegia and Tetraplegia, Outpatient Techniques for Neurology, and evening lectures on both Yoga and Hypnotherapy in Neurology – any other suggestions/requests will be favourably received!

NORTH TRENT

Emma Procter
Regional Representative

North Trent has not had the most extensive program this year but the lectures we have had were very successful and I would like to take the opportunity to say a big thank you to everybody for the fantastic turnout – your support is much appreciated.

Bhanu Ramaswamy gave a very thought provoking lecture in Chesterfield, on where neuro physiotherapy is going now and Liz Mackay filled Mount Vernon hospital in Barnsley to bursting point for her informative presentation on pusher syndrome. I must apologise for the late cancellation of the July lecture and the postponement of August's – we are planning to reschedule both. The mild chaos is caused by the inexperience of the committee (remember we are all new at this!) but we are learning fast and we will endeavour to be better organised next year.

We have the following day courses planned:

- December 3rd 2005 (half day) *Evidence based management of spasticity in stroke* Paulette van Vliet, Sheffield (exact location TBC).
- 26th April 2006 *Gym Balls* Janice Champion, Park Rehab Centre, Rotherham.
- 21st October 2006 (half day) *Regeneration and recovery after CNS lesion* John Marsdon, Sheffield (exact location TBC).

I am sorry that I have insufficient details to publish a lecture programme for the rest of the year now but we will let you know via *Frontline* as well as local advertising when events are happening. We are currently in the planning stage for the 2006 programme so if anyone has any suggestions for lectures or courses, or would like to host an event at their hospital, please get in touch with myself or any of the committee.

NORTHERN

Julia Williamson
Regional Representative

I hope everyone had a good summer. For the Northern region it has been a rather 'curates egg' affair. That is to say, good in parts.

Our neurophysiology course with John Rothwell went well. The day was well attended and feedback was excellent. Unfortunately a core stability course with Liz Mackay did not run due to lack of applicants. Liz was very understanding and we hope to arrange something in the future.

Talking of which here are some forthcoming events:

- October *Case Report Writing for Reflective Practice*
- November *FES course* This will be heavily subsidised by Northern ACPIN so do not miss this opportunity to gain a recognised qualification in this expanding field.
- Jan/Feb/March 2006 *Introductory Bobath weekends*. These are always popular so book early. Details available soon.
- May 2006 *Senior Bobath Study Day* Mary Lynch-Ellerington.

We have other ideas and tutors booked but as always we would love to hear from those in the region about what you would like.

Finally some hellos and goodbyes. Thanks to Janet Nesbutt for her hard work with the committee we wish you well in your new job.

Congratulations to Alex Haugh and Christina Whittenbury on their forthcoming hatchings. We hope all goes well and can't wait to meet the new committee members. And welcome to the committee to Penny Maddock, Kate Higham, Emma Smart and Catherine Birkett.

Finally this is the last missive from me. The new Regional Rep will be Pam Thirlwell from the James Cook University Hospital Spinal Unit in Middlesborough. I have the honour of joining the National Committee but I am sure I will stay in touch with this dynamic and friendly bunch!

OXFORD

Fiona Cuthbertson
Regional Representative

Oxford ACPIN has enjoyed another prosperous six months with excellent attendances at all of our evening lectures – thank you very much indeed to all of our speakers. Furthermore our social evening in July turned out to be a most successful event, where several members enjoyed learning the new skill of punting … and surprisingly nobody got particularly wet!

Our AGM in March saw a bit of a committee reshuffle with Liz Lewis, Georgina Bruce and Meredith Newman all standing down from their various positions. On behalf of Oxford ACPIN I would like to thank all of them for their hard work over the past couple of years, particularly Liz as secretary and George as treasurer. We are delighted that Nicola James and Emma Blair have decided to take up the respective positions of secretary and treasurer from their roles as committee members, and we are very pleased to welcome Sophie Pendred onto the committee. And just to clarify the reason for my rapidly expanding waistline … impending motherhood in November! Whilst I do intend to continue as Oxford's regional rep for the time being, Claire Guy will be attending a couple of national meetings on my behalf over the winter period.

As always we would love to hear from you if you are interested in becoming a committee member or if you have any ideas for future events. Please feel free to let any of the committee know or contact Claire Guy on 01865 737290.

Provisional 2006 programme

- January – date tbc *Practical* Charlie Winward, OCE.
- 8 February 7.15pm *Motor Neurone Disease* Rachel Marsden and Dr Kevin Talbot, OCE.
- March 29th *AGM* Sue Edwards, Wycombe General Hospital.
- April/May (One day course) *The Management of Incomplete Spinal Injury* Laura Bochkoltz and Amanda Austin, Royal Berks Hospital.
- June *Parkinsons and related syndromes* Dr Matthew Jackson, Wycombe General Hospital.
- July 13th *Social Evening – Punting*, Oxford.
- October 13th-14th (Two day practical course) *Gait and balance* Pam Mulholland, Bobath Tutor, OCE.

We will send out fliers with further details of individual lectures and courses. Please also refer to the branch news noticeboard section of *Frontline* where up to date lecture and course details can always be found.

SCOTLAND

Paula Cowan
Regional Representative

Scotland has a healthy membership and also a great committee. So far this year we have run a hydrotherapy course which was very well attended and had excellent feedback. Unfortunately we had to cancel an upper limb course with Pam Mulholland due to small numbers. A motor neurone study day had excellent feedback and response in terms of numbers. A gait/orthotic course is to be held in Glasgow on the 16th September at the Southern General and anyone interested should contact Catherine Graham.

Next year we have plans for a MRP course and a vestibular rehab course. The committee is also looking at the idea of running an NLP course.

The committee this year has also had to write a protocol for course fees to standardise things like refunding, securing places etc. It is aimed to eliminate any confusion and make things as fair as possible to course organisers and participants. This will be sent out with our next news letter. I will finish by saying thank you to the committee for all their hard work and we look forward to future events.

Please contact the committee if anyone has ideas for future events.

SOUTH WEST

Kirsten Cheadle
Regional Representative

South West ACPIN currently has 125 members and we have been proactive in trying to reach our members outside of the Bristol/Bath area. Our AGM saw an interesting debate on the just released NSF for longer term conditions, with an informative presentation by Ros Wade. We had an interesting lecture on MS by Jenny Freeman in Exeter and unfortunately the posture management course in Cardiff had to be cancelled due to lack of interest.

The programme for 2005/6 is still being fine tuned but we have the following courses planned:

- November 12th *Practice and Feedback for stroke patients* Paulette van Vliet, Bristol, £50.
- February *Incomplete spinal cord injuries* Sue Edwards, Cardiff.
- March *Brain tumours and other neuro conditions* (to be confirmed), Taunton.
- Summer 2006 *The movement science approach, upper limb course* Ailie Turton, Bristol.

Further details will be available on the website southwestacpin.net and all courses will be advertised in *Frontline*.

We have offered a free place at Congress to one of our members this year. We have collected information from our members via a questionnaire and have used this to help develop our programme. We would value any further feedback from our members on courses/ lectures/speakers and venues and welcome new members to the committee. Please contact me, or any member of the committee – see the website for contact details.

SURREY & BORDERS

Brigitt Bailey
Regional Representative

Our AGM on 1st February with Sue Edwards talking on 'Complex Disability' was very well attended we had very positive feedback from the membership.

We managed to recruit some new members for the committee. This was a great relief, as we had various members wanting to resign or reduce their involvement on the committee and we were worried that the viability of the group was in question. Due to the fact that the future of the group was uncertain, we had decided to organise just evening lectures rather than any courses for the forthcoming year.

We started in April with Sarah Baradell presenting an interesting and clinically relevant talk 'Why does the pusher patient push?' based on her MSc research work, this gave evidence based background into current explanations for the 'Pusher' syndrome, supported by case studies.

In June Pauline Pope gave a very informative and practical talk on 'Postural Management'. This lecture was well attended and successful.

The new enthusiastic committee members are already considering some study days for next year and are looking at doing some joint days with the local NANOT branch, as well as a continued programme of evening lectures. So far the following dates have been confirmed:

- November 10th *Communication* Rosemary Townsend, St Peter's Hospital.
- February 2006 *AGM* TBC.

Watch out for flyers giving details of these evening lectures.

If you are interested in becoming a committee member or have any suggestions for topics or speakers for the 2006 programme please let us know and contact: Brigitt Bailey on 01483 846346 or by e-mail brigitt.bailey@shawpct.nhs.uk.

SUSSEX

Clare Hall
Regional Representative

Sussex ACPIN continues to enjoy a varied programme of events in different venues.

The future programme is as follows:

- November 17th *Use of Orthotics in the Treatment of Gait with Neurologically Impaired Patients* Michelle Long, Clinical Specialist, Southlands Hospital, Shoreham, West Sussex.
- February 10th 2006 *AGM and Study Day – Application of Out-patient Techniques to the Neurological Shoulder Complex* Carol Mc Crum, Consultant Physiotherapist in out-patients, Conquest Hospital, St Leonards-on-sea, East Sussex.

Previously in 2005 Sussex ACPIN had run a study day, part I, Myofascial Release in Neurology, The Lower Limb, with Mary Sanderson (BA Sports Studies). This was a fascinating practical course from an excellent speaker which widened our experience of the treatment of the soft tissues.

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

Helen Foster
Regional Representative

The Wessex Region have had a quiet 2005 due to a baby boom within the committee. Naomi Wells (Treasurer), Committee Member Ros Cox and the current Chair Jo Kileff have all given birth recently. We wish them well with motherhood.

The highlights of 2005 have been an excellent evening lecture by Paul Charlton on 'Orthotic Management of Spasticity' and an evening lecture at Portsmouth Queen Alexander Hospital on Positioning Stroke Patients. We also had a Spinal Injury Study Day on the 22nd September at Salisbury District Hospital.

We are currently undergoing a shake up of the committee with Jo Kileff resigning from the post of Chair and Helen Foster resigning as Regional Rep, both are keen to remain as committee members. Naomi Wells will be taking over as Chair and Claire Eastham is applying for the position of Regional Rep. We are therefore looking to recruit a Treasurer and a Secretary and to expand the committee. We would be delighted to hear from anyone interested, please contact Naomi Wells. We are holding a meeting with cheese and wine at Southampton General Hospital to reallocate these positions on September 20th at 7.30.

WEST MIDLANDS

Liz Cohen
Regional Representative

In 2005 we have continued to have a strong membership and committee in the West Midlands. We have seen a few changes within the committee with Kathryn Bamforth and Helen Lindfield leaving the area. Helen stepped down after three years as chairperson, handing over the reigns to Linzie Bassett. We thank Helen and Kathryn for their commitment to the committee and wish them well for the future in their new regions. We have welcomed new members to the committee including those from the Worcestershire and Warwickshire areas, which we hope will widen the location of courses within the area. On this note, a lot of courses have been run in Birmingham due to the location of committee members, so if you cannot commit to being part of the committee but feel you could assist in providing a venue for study days and courses in the West Midlands area we would be keen to hear from you.

This year we have run a few courses and study days with a large gap during the summer months. On March 19th we welcomed Martine Nadler to

support our AGM. The day was stimulating and thought provoking reviewing the current research in support of Neurophysiology and Neuroplasticity. The AGM was well attended at lunch. Then at the end of August, SOMEK and ACPIN ran a two day 'splinting for abnormal tone' workshop in collaboration with NANOT at Moseley Hall Hospital. I hear that this was well received, although we have not had the formal feedback, (as I write). On September 1st, due to low numbers (possibly due to poor timing), we unfortunately had to cancel the 'Practice and Feedback for Stroke Patients' study day, which was to be run by Paulette van Vliet. Apologies for inconvenience were sent to Paulette and those who had booked on the course. We hope to reschedule the study day at a more convenient time avoiding Bank Holiday, the end of the school holidays and away from other scheduled courses.

Programme for 2005 – 2006

We are already planning a busy schedule for the end of this year and into 2006. The programme so far (dates, titles and venues to be confirmed) is:

- December 6th or 7th (Evening lecture) *Dystonia* Dr Soryal, Priory Hospital, Birmingham.
- February/March 2006 *AGM and Neurophysiology study day* Liz Mackay.
- June *PNF course* Nikki Rochford.
- September *FES* Christine Singleton, City Hospital (TBC).
- November *Out patient techniques in Neurology* Helen Lindfield, Worcester (TBC).

We also hope to reschedule the Practice and Feedback for Stroke Patients with Paulette van Vliet and Proprioception for the Upper limb evening lecture with Jill Ramsay (cancelled from last year).

Thank you for your continued support. And thanks to the committee for all their hard work.

YORKSHIRE

Jill Fisher
Regional Representative

Many thanks to Debbie Neal and Caroline Brown both of whom have given excellent service on the Yorkshire ACPIN committee for a number of years. They have both contributed a great deal including organising many lectures and day courses. Debbie has been chair for two years and Caroline has been regional representative for three years. We are pleased to welcome two new members to the committee, Michelle Pickstock and Liz Walker.

The AGM study day was divided into two parts: neural control of gait by Dr Lynne Rochester and FES by Christine Singleton, both excellent talks. Also very much enjoyed was the lecture by Phil Commons, McKenzie tutor on outpatient techniques in neurological patients.

The committee would welcome members who could offer venues to host a lecture or day course to spread the events around the region.

Future programme

- September 24th *Posture management and study day* Pauline Pope
- *Visual systems in balance training* Nikki Adams (details to be finalised).
- *Gait study day* Debbie Strang (details to be finalised).
- *Pain in neurological conditions, theory and applications to treatment* Mick Thacker (details to be finalised).
- *Developments in stroke treatment* Dr Bamford (details to be finalised).

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

Guidelines
for authors

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

CASE REPORTS

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

Introduction
State the purpose of the report and why the case is worth reading about to include in short sentences:
- The patient and the condition.
- How the case came to your attention.
- What is new or different about it.
- The main features worth reporting.

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

Intervention
Describe what you did, how the patient progressed, and the outcome. This section should cover:
- Aims of physiotherapy.
- Treatment, problems and progress.
- Outcomes, including any changes in impairment and disability.
- Justification of your choice of treatment; clinical reasoning
- The patient's level of satisfaction and the outcome and the impact on quality of life.

Method
This should clarify what intervention took place and what measurements were taken. It should include:
- Description(s) of outcome measures used and reference
- Interventions carried out (where, when, by whom if relevant)

Implications for practice
Discuss the knowledge gained, with reference to published research findings and/or evidence about clinical effectiveness. For example:
- Outcome for the patient.
- Drawbacks.
- Insights for treatment of similar patients.
- Potential for application to other conditions.

Summary
List the main lessons to be drawn from this example.

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

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

ABSTRACTS OF THESIS AND DISSERTATIONS

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

AUDIT REPORT

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

REVIEW OF ARTICLES

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

PRODUCT NEWS

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

REVIEW OF BOOKS, SOFTWARE AND VIDEOS

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

LETTERS TO *SYNAPSE*

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

PREPARATION OF EDITORIAL MATERIAL

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

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

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

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

Measurements
As the International System of Units (SI) is not yet universal, both metric and imperial units are used in the United Kingdom in different circumstances. Depending on which units were used for the original calculations, data may be reported in imperial units followed by the SI equivalent in parentheses, or SI measurements followed by imperial measurements in parentheses. If the article mentions an outcome measure, appropriate information about it should be included, describing measurement properties and where it may be obtained.

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

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

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

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