Use of resistive exercise for muscle strengthening in early stroke rehabilitation

A posturally-biased exercise programme for people with Parkinson’s

Trunk mobilisations and their effect on lung expansion in neurosurgical patients

Movement dysfunction in the upper limb – ACPIN March residential conference
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.

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From the Chair
Leonie Bennett MSc RCFP
ACPIN Chairperson

Welcome to the Spring edition of Synapse. We are in a period of uncertainty with the threatened war with Iraq and closer to home is a period of Agenda for Change. To quote the CSP: ‘NHS staff are facing the biggest shake-up in years, grading and conditions since the birth of the NHS over 50 years ago.’

The Government’s Agenda for Change (AFC) proposes a radical re-think of the way health service staff, including CSP members, are rewarded for their work. The student allowance being one of the most controversial components of the plan. With the Government’s push to increase student places even further, (Therapy Weekly) it is rumored 15%, this heightens the demand for clinical educators. By the time this edition has gone to press we should know the outcome of both these events.

The Executive Committee is also undertaking a complete re-organisation due to the resignation of several longstanding committee members: Anteeka Derry (Vice Chair), Rosenna Wright (Hon Membership Secretary), Ron Wade (Synapse Co-ordinator) and Rosie Hitchcock (Executive Committee Member). We thank them for all their time, energy and commitment to ACPIN over the last few years and wish them well in future ventures. Louise Cateathouse (Minute Secretary) left the Executive Committee in January.

The four recent posts were advertised in frontline and had a total of six applications which was a very positive response. The structure of the committee and who is in position is featured later in the journal. Emma Forrest (Scotland), Naomi Jones (Sassoon) and Ian Matthews (Northampton) have resigned as Regional Representatives, we thank them and wish them well.

In view of all of these changes it has been proposed that I remain Chair for one further year to work alongside the new Vice Chair. The Executive Committee will formally vote me on to the committee at our meeting on 14th May 2004. In light of ACPIN’s current committee changes, this is a certainty that our existing constitution is updated. The Executive Committee is in the process of drafting a new constitution, this will be available for consultation by all members via the website and Synapse later this year.

We would value your comments. The new constitution will be formally voted at next year’s AGM.

Professor Ray Tallis, our President, has been in post for one year; he has been an invaluable source of information and support. He has kindly accepted the invitation to lecture on ethics at Congress and to Chair the fringe meeting.

Membership continues to flourish, total comparison of members from 1998 (174 members) to 2002 (370) is an increase in membership of 40%. To date we have 1,020 members for 2003, 200 of these being new members. I think this indicates how successful ACPIN is as a clinical interest group and that it is truly meeting the demands/needs of all our members.

Synapse has maintained its reputation and provides the vital communication link between members and the committee. For its development to continue it relies on you as members to submit material!

By the time you receive this copy of Synapse our fourth residential conference will have taken place. The title has proved to be extremely popular with over 200 delegates attending the two-day conference, we had a further 50 delegates on a waiting list. A full report of the events is included in this edition.

We are delighted to be hosting a programme entitled ‘Progressive Disorders’ at this year’s CSP Congress, taking place at the ICC Birmingham from the 17th-19th October 2003. A fringe meeting and ACPIN supper are being planned following feedback from last year’s programme. The final programme is included in this edition.

ACPIN and EAP Pharmaceuticals combined forces recently to host ‘The Management of Spasticity’. The days were co-ordinated at regional level and seem to have been well attended.

The applicant who applied for the research bursary was awarded the money to assist in their research. Invitations for this year’s bursary are now requested, see report by Mary Cramp (History Research Officer), following the plea by the CSP for research questions for the upcoming Priority Project – Neurology Panel, a full pack has been published (whole pack £10, individual specialities £10) – definitely worth mentioning at See letter-page request for a full pack.

The Communication Sub-Group has had two meetings for the Annual Representatives’ Conference accepted.

As my report indicates ACPIN has several new projects in the pipeline and two further events to organise. The next AGM will be on 20th March 2004 at the Hilton Hotel, Northampton, topics is still to be decided. I hope this clarifies some of the work that ACPIN carries out on your behalf.

Finally to you all, thank you for your loyalty and for making ACPIN such an exciting clinical interest group to belong to.

REFERENCES

ADDRESS FOR CORRESPONDENCE
92 Redacre Road, Baldersdale, Sutton Coldfield, West Midlands B73 5EE

Use of resistive exercise for muscle strengthening in early stroke rehabilitation
A survey of UK neurophysiotherapists

ABSTRACT
The majority of UK physiotherapists report using the Bobath concept with stroke patients which raises the clinical expectation that resistive exercises to increase muscle strength would not be used after stroke.

Objectives To find whether UK physiotherapists use resistive exercise for patients in the first three months after stroke and whether the decision to do so or not is based on research evidence, clinical experience, training or another reason.

Methods A closed question questionnaire was posted to 917 physiotherapists in the UK who were members of the Association of Chartered Physiotherapists Interested in Neurology (ACPIN). Physiotherapists sent the questionnaire were given three weeks to return it before being posted a reminder. Data were independently entered into SPSS 10 by the first author and the entry was checked by the last author. The frequency of responses were determined.

Results Of 917 questionnaires 790 were returned, a response rate of 86%, and 704 questionnaires were suitable for analysis (77%). Of the 704 respondents 437 (62%) reported using resistive exercise. Most respondents gave clinical experience as the reason for their decision to use or not to use resistive exercise (74% of those reporting yes and 48% of those reporting no).

Conclusions This study found that the majority of respondents reported using resistive exercise for patients in the first three months after stroke and that clinical experience was the main basis for ACPIN members’ decision to do so.

INTRODUCTION
The majority of physiotherapists in the UK report using the Bobath concept as a basis for their interventions with stroke patients (Sackley et al 1996, Davidson and Waters 2000). This concept appears to discourage activities that are effortful for the patient, such as muscle strength training. It might be assumed, therefore, that UK physiotherapists would avoid using resistive exercise. However, conventional clinical practice could be influenced by experimental evidence which is now beginning to challenge predominant clinical theory (Boussouma et al 1997, Brown et al 1997, Miller et al 1997, Meric et al 1999, Tėnzira-Sabuela et al 1999, Bohannon et al 1991, Davies et al 1996, Buttefisch et al 1995).

It is difficult to be certain as physiotherapists remains a practical profession and written description of the actual content of therapy is limited (Lemesh 1996). Studies which have described specific interventions suggest that there is heterogeneity in those used by therapists (Mickleborough et al 1997, Pomeroy et al 1997) which could be influenced by the content of initial physiotherapy training (Turner and Whitefield 1999) and/or based on clinical experience rather than experimental evidence (Sackley and Lincoln 1996, Nilsson and Nordholm 1992, Care et al 1994).

Clarification is required as there is now increasing interest in undertaking trials to evaluate the relative benefit of resistive exercise and conventional physical therapy. Such trials will be flawed if the assumption that conventional physical therapy does not include resistive exercise is incorrect.

To begin to explore whether conventional physical therapy in the UK contains resistive exercise this study focused on the following broad questions:
1. Do physiotherapists in the UK use resistive exercise for patients in the first three months after stroke?
2. What is the basis for physiotherapists’ decision about the use of resistive exercise in the first three months after stroke: research evidence; clinical experience; training or another reason?

METHODS
We used a closed question, postal questionnaire for a cross-sectional sample survey (Robson 1993) of current practice. The definition of resistive exercise and survey questions were developed by the research team consulting with a research expert in the design, administration and analysis of surveys and also clinical physiotherapists on secondment to our research unit.

Resistive exercise was defined as:
exercise designed to increase muscle strength with use of resistance to muscle activity/movement provided by a variety of means including gravity, body weight and external loads.

The definition was deliberately broad so that it would include a number of different interventions that have the
primary aim of increasing muscle strength whilst emphasising that the aim of the exercise needed to be to increase muscle strength.

The questionnaire was designed to fit on one side of A4 and, to ease completion, respondents were required only to tick boxes or give brief replies to questions. All respondents were asked to enter their professional grading and date of qualification. Respondents were asked whether they used resistive exercise for patients in the first three months after stroke and the reason for their clinical decision.

The questionnaire was sent with a covering letter and a stamped addressed envelope was enclosed to facilitate reply. If after three weeks the completed questionnaire had not been returned a second copy of the questionnaire was sent to non-respondents along with a further stamped addressed envelope.

RESPONDENTS
This questionnaire was sent to all physiotherapists (917 excluding the last author) whose names were listed in the database of members of the Association of Chartered Physiotherapists Interested in Neurology (ACPIN). ACPIN members were chosen as it is reasonable to expect that as members of the neurology special interest group they would influence the practice of non-members. We made the assumption that ACPIN members were both ‘market leaders’ and ‘opinion-leaders’.

ANALYSIS
Data was independently entered into SPSS 10 by the first author and then checked by the last author. The data was analysed to determine the response rate and the characteristics of respondents in terms of professional grade and years of service. Analysis of the frequency of yes and no responses was then undertaken along with the frequencies of reasons given for use or non-use of resistive exercise.

RESULTS
Of the 917 questionnaires 790 were returned, a response rate of 86.0%. Of the 905 returned questionnaires 78 were not included in the analysis for the following reasons: physiotherapists were not working clinically (n = 11); physiotherapists did not see patients within three months of stroke (n = 56); physiotherapists did not accept the definition of resistive exercise (n = 8); questionnaires had been misdirected (n = 4); and no reason for non-completion (n = 1). In addition, eight questionnaires were excluded because of incorrect completion. This left 704 (77%) questionnaires for analysis.

The characteristics of the 704 respondents are given in Table 1 which shows that the majority of respondents (47%) had been qualified for between three and ten years and the most frequently given professional grade was Senior 1 Physiotherapist (57%).

Of the 704 questionnaires included in the analysis 65 respondents clearly identified whether or not they used resistive exercise but had ticked more than one box to give a reason for their practice. These dual responses have not been included. These data show that 69% (n = 437 of 704) of physiotherapists report using and that 38% (n = 267 of 704) of physiotherapists report not using resistive exercise to strengthen muscles for patients in the first three months after stroke (Table 2). Most physiotherapists gave clinical experience as the reason for their decision (74% of those reporting ‘yes’ and 48% of those reporting ‘no’). Experimental evidence was chosen as the reason by 17% of those using resistive exercise and 10% of those not using resistive exercise (Table 2). The other reasons informing the clinical decision to use or not to use resistive exercise in the first three months after stroke are given in Table 3. Interpretation of these responses is limited by the small number of physiotherapists giving an ‘other reason’ and the number of different responses obtained. The most frequently given reason for decisions about the use of resistive exercise were that physiotherapists ‘focus on the normal movement/Bobath concept’ rather than on increasing muscle strength (n = 25, not using).

DISCUSSION
The finding that most respondents reported using resistive exercise with patients in the first three months after stroke is surprising as the majority of physiotherapists in the UK report using the Bobath concept (Sarkley and Lincoln 1996, Davidson and Wales 2000) which appears to discourage resistive exercise. It is possible that these results have been influenced by a response bias in those not responding might have reported differently to those that did respond. The possibility seems unlikely however because of the high response rate, 90%, in this questionnaire. It is also possible that this sample of physiotherapists was not typical of the profession as a whole, because we surveyed a sub-group, ACPIN members, who were more likely to incorporate published research findings into their practice and therefore more likely to prescribe resistive exercise. The fact that most respondents based their choice on clinical experience however does not support this possibility.

Another explanation for these findings is that some of the respondents experienced difficulty with the definition of resistive exercise given in the questionnaire. It is of interest that one of the most frequent ‘other reasons’ given for using or not using resistive exercise was that physiotherapists ‘use body weight in normal movement and/or functional training’. Questionnaires from eight physiotherapists had to be excluded from analysis because the respondents were unhappy with the definition of resistive exercise. The definition used was carefully considered for this study, further developed through discussion with clinical physiotherapists and was thought to be broad enough to embrace different clinical applications of resistive exercise whilst stressing that the aim of treatment is to increase strength.

However, confusion might have been introduced by...
reference to the use of body weight and gravity to provide resistance. Body weight and gravity are of course used in the Bobath concept to facilitate normal movement but not to increase muscle strength.

Although only a tiny minority of respondents indicated confusion with the definition it is possible that some other respondents have said that they do use resistive exercise to strengthen muscles when, in fact, they are using these techniques for other purposes. However, in addition to the emphasis within the definition that the aim of treatment is to increase strength, use of the word resistive implies effort and strength training. Moreover respondents were encouraged to tick the YES option even if they only occasionally used resistive exercise. It therefore seems unlikely that respondents were confused by the definition.

Two obvious limitations of this study are that the format necessitated relatively superficial answers and the closed question format might have resulted in some physiotherapists feeling that none of the options were appropriate. The ‘other’ section might not have allowed for the expression of the full range of responses the physiotherapists would have given to a questionnaire with a more open format. However, it is argues that the brevity of the questionnaire contributed to the high response rate. As always in questionnaire-based research, there is a trade-off between the amount of information required by the questionnaire and the response rate.

Although this study found that most physiotherapists report using resistive exercise to increase muscle strength in the first three months after stroke it is possible that actual use differs. However any questionnaire has the limitation that it captures reported rather than actual clinical behaviour. Validity testing might involve the comparison of the agreement between actual and reported use and this is a possible task for future studies. In the absence of clarity about the content of clinical practice in this area it seems essential to be wary of making assumptions about the actual content of conventional physiotherapy when making comparisons in evaluative research. For example a recent trial comparing the Bobath and Motor Relearning approaches only described the content of therapy on the basis of the definition that the aim of treatment is to increase strength, use of the word resistive implies effort and strength training. Moreover respondents were encouraged to tick the YES option even if they only occasionally used resistive exercise. It therefore seems unlikely that respondents were confused by the definition.

ACKNOWLEDGMENTS
We gratefully acknowledge the financial support given by The Stroke Association, all the physiotherapists who gave their time to participate in this study and Sandra Chambers for constructive criticism of an earlier draft of this paper. We also thank Steve Barrow who generously gave his time to advise on the design of the questionnaire, analysis of the data and comment critically on an earlier version of this paper.

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ADDRESS FOR CORRESPONDENCE
Professor VM Pomeroy
Centre for Rehabilitation and Agency
Cerebral Medicine
St George’s Hospital Medical School
Corner Cemetery Lane
London SW17 ORE
Tel: 020 8712 5527
Fax: 020 8662 9756
Email: v.pomeroy@sghms.ac.uk
A posturally-biased exercise programme for people with Parkinson's

In the past few years, there has been an increasing focus from the Government on addressing issues for the older population. Implicit in Department of Health policies, from Caring for People (1999) to National Service Framework (NSF) for Older People (2001), is the need to tackle chronic illness due to the growing impact of health and social service issues as the nation 'greyes'.

The evidence to date of overall physiotherapy interventions with PD sufferers is either poor or absent and does not substantiate anecdotal reports from professionals, with people with PD or carers regarding the effectiveness of input. An Effectiveness Bulletin on neurological conditions published by the Chartered Society of Physiotherapy (2001) concluded that many areas of physiotherapy had yet to be sufficiently evaluated, and the results from reviews, such as the two Cochrane systematic reviews (Deane et al 2001 a & b) and Reuter and Engelhardt (2002) cannot be read to imply lack of effect as both were inconclusive regarding the effectiveness of physiotherapy interventions. An aim of the exercise regime documented, therefore, is to establish a rationale for the exercises included, based on available evidence that might be proposed as one 'standard' approach in the treatment of PD.

During the development of this regime, articles on other styles of exercise (anecdotally recognised as having a positive effect on PD) were sought for review, including the Alexander Technique (Stallibrass 1997), Pilates (Reyniske 1993), Conductive Education (Kinsman 1986, Kinsman et al 1988, Brown 2000) and Tai Chi (Li et al 2001, Janowicka 2001, Jan et al 2000, Hong and Robinson 2000), although not all looked specifically at PD. Common underlying themes to them all seemed the use of cognition to promote posture and body awareness or control of movement with emphasis on slow, flowing movements. All were timed with breathing to induce relaxation. This core principles follow a rationale suggested by both Morris (2000) and Schenkman et al (1998) that suggest focus on postural control during movement.

The author bases the proposed regime on this concept of action systems of motor control, and three therapeutic models outlined below:

1. The Movement Enablement Through Exercise Regimes and Strategies (METERS), which advocates the promotion, maintenance and use of quality functional performance by focussing on four core areas of physiotherapy practice – gait, balance, posture and transfers (Plant et al 2000) and detailed further in the Guidelines for Physiotherapy Practice in Parkinson’s Disease (2001).


In the proposed regime, emphasis has been placed on minimising musculoskeletal limitations and postural deformities in order to preserve the individual’s capability for independent function as long as possible. Much is made of regaining rotation as the author has found clinically, that it is a powerful tool in inducing relaxation and decreasing rigidity (and hypothesises that this is due to restoration of muscle balance between flexors and extensors), and is also a necessary component of balance reactions and functional activities. The programme utilises activity from two separate motor control systems: the medial system (concerned primarily with axial muscle contraction and extensor innervation), necessary for postural and anti-gravity work and the lateral system (concerned with distal limb movements and flexion innervation), necessary for speed and agility in movement (Buchwald 1967, Stoecklemyer 2002).

It is hypothesised, therefore, that by following this regime of relaxation, breathing control and slow, controlled movement at a conscious level, the resultant effects should be twofold – in physical terms, there could be benefits from better posture (and therefore balance and respiratory status), as well as control of movement (with subsequent influence on delayed progression from poverty of movement on physical function eg transfers, gait). In psychosocial terms, the group intervention will have a positive effect on the aspects of the disease eg well-being, social participation etc, whilst better physical ability will lead to improvements in confidence and independence.

The exercises progress through postural sets of lying, into sitting and then into standing, allowing work on core stability and single limb range of movement in lying to more complex sequences involving bilateral or diagonal limb movements where the base of support is progressively decreased and the complexity of the core areas of physiotherapy practice – gait, balance, posture and transfers (Plant et al 2000) and detailed further in the Guidelines for Physiotherapy Practice in Parkinson’s Disease (2001).

A SUMMARY OF THE EXERCISE PROGRAMME, THE EXERCISE AIMS AND SOURCE THAT BACKS UP/RECOMMENDS THE EXERCISES

<table>
<thead>
<tr>
<th>EXERCISE</th>
<th>AIM</th>
<th>LITERATURE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relaxation</td>
<td>Reduces daily tensions prior to exercising, heightens awareness of the different parts of the body and starts to decrease rigidity to allow increased flexibility.</td>
<td>Franklin 1984, Schenkman et al 1998, Morris et al 1999</td>
</tr>
<tr>
<td>Breathing exercises</td>
<td>Further reduces tension and increases vital capacity of the lungs.</td>
<td>Schenkman et al 1998</td>
</tr>
<tr>
<td>Exercises in lying</td>
<td>To increase range and freedom of movement of head on trunk. To aid increased visual input and balance (anticipatory and reactionary strategies). Encourage posture/positioning of the head.</td>
<td>Weissenboeck et al 1988, Schenkman et al 1998, Di Fabio and Ennsworth 1997</td>
</tr>
<tr>
<td>Pelvic tilt</td>
<td>To improve range and smoothness of movement in pelvis for activities of weight transfer eg sit to stand, walking. Strengthening trunk muscles used for core stability.</td>
<td>Norris 1993</td>
</tr>
<tr>
<td>Knee opening</td>
<td>Core trunk stability whilst controlling movement and range of a single limb, also stabilises the pelvis in transverse plane.</td>
<td>Norris 1993, Hodges et al 1997 &amp; 2000</td>
</tr>
<tr>
<td>Arm and leg stretch</td>
<td>Increase complexity with dual tasks to control opposing limbs for core stability and diagonal limb range.</td>
<td>Norris 1993, Hodges et al 1997 &amp; 2000</td>
</tr>
<tr>
<td>Sitting posture</td>
<td>Posture maintenance with mental rehearsal of good alignment for sitting and standing tasks.</td>
<td>Franklin 1986</td>
</tr>
<tr>
<td>Sitting pelvic tilt</td>
<td>Progression of pelvic tilt exercise in lying, with maintenance of upright posture.</td>
<td>Morris 1993</td>
</tr>
<tr>
<td>Trunk rotations</td>
<td>Improve range and freedom of trunk rotation to separate upper trunk from lower trunk for counterbalance in walking and to maintain balance in tasks involving reach or handling.</td>
<td>McChesney 1986, Schenkman et al 1998</td>
</tr>
<tr>
<td>Cycling on feet</td>
<td>Combination of above two exercises cycling in one direction, and then the next to combine hip and ankle balancing strategies plus weight transference on all directions.</td>
<td>Hovakimian et al 1992, Woollacott &amp; Shumway-Cook 1990, Didden 1990, Manchester et al 1999</td>
</tr>
<tr>
<td>Sideways arm stretch</td>
<td>Complex co-ordination of bilateral out of phase arm control in two planes with neck rotation.</td>
<td>Schenkman et al 1998, Morris et al 1999</td>
</tr>
<tr>
<td>Rotation in standing</td>
<td>Progression of rotation exercise in sitting, with maintenance of upright posture.</td>
<td>Schenkman et al 1998, Morris et al 1999</td>
</tr>
<tr>
<td>Rotation with stepping</td>
<td>Progression of the above exercise, but inclusion of a step to the side rotating to increase complexity and standing balance.</td>
<td>Morris et al 1999</td>
</tr>
</tbody>
</table>

...continued overleaf...
movements increased. Elements of strengthening, balance, co-ordination of movements and flexibility are incorporated into the exercises, and most of the exercises are synchronised with breathing, and all done at a cognitive level, and with auditory cues (Morris et al 1998, CSP Effectiveness Bulletin 2001, Plant et al 2001). Morris (2000) points out that there is little use in working on individual symptoms if the training does not generalise to function such as standing and walking, so the final exercises concentrate on aspects of stepping and sit to stand control hopefully resulting in transfer of skills to gait and transfers. The table above summarises the exercises recommended and the aims behind the movement.

No specific bed mobility or floor transfer exercises are done as the task of getting onto and off the floor to perform the lying exercises require similar skills. All the exercises can be modified so some of the standing ones are done with arm support if the patient is very unstable, or in sitting, where the bottom becomes the base of support. Throughout the sitting and standing exercises, maintenance of best postural alignment is stressed. Learning is achieved in stages, and in this concept it is widely accepted that the earlier stages of learning are more defined aspect of postural control. The class could be limited to those in the earlier stage of the disease due to the cognitive level required to achieve best results from this programme.

The next stage of this theoretical regime is to prove its effectiveness through research as one ‘standard’ approach in the treatment of PD. The Parkinson’s Disease Society have made a video with an accompanying booklet that will increase the effectiveness through research as one ‘standard’ approach in the treatment of PD. For further challenge, balance the task of the floor demands greater control as there is no knee flexion to counter forward movement.

The Parkinson’s Disease Society have made a video with an accompanying booklet that will increase the effectiveness through research as one ‘standard’ approach in the treatment of PD. For further challenge, balance the task of the floor demands greater control as there is no knee flexion to counter forward movement. The patient is often on/off the floor as necessary.

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Trunk mobilisations and their effect on lung expansion in neurosurgical patients: two case studies

Patients who have undergone complex neurosurgical procedures can experience prolonged periods of immobility and require mechanical ventilation as a result of abnormal breathing patterns and respiratory muscle weakness. These changes can inevitably affect posture and thoracic mobility and may predispose them to using compensatory strategies, which will affect movement (Edwards 2002) and may also reduce the efficiency of many other functions of the trunk such as ventilation.

The thorax functions to facilitate ventilation ie inflow and outflow of air between the atmosphere and lung alveoli and to protect the thoracic structures (Gamble 2002). To be able to perform these functions the musculature needs to be able to provide stability with mobility. Farley (2000) reported that ‘trunk muscles can be activated to meet functional requirements for combined behaviours’. It is postulated that by improving trunk posture and stability a direct effect on respiration is produced by causing an improvement in lung expansion. Authors imply the theoretical link between the importance of thoracic musculature and posture on respiration, Davies (1999) wrote that ‘Both the extensors and flexors of the trunk are directly related to respiration’. However, no previous research to date has been performed on this topic.

Edwards (2002) defines trunk mobilisations as ‘movements of the trunk, facilitated by the physiotherapist, which are used to modify abnormal tone and improve alignment’. This treatment aims to improve alignment of the trunk and pelvis with regard to midline, to facilitate active trunk movement and regain proximal stability around the trunk and pelvis. Work has been done on the effect of manual therapy on lung function. Viberk (1989) studied 14 patients with Cystic Fibrosis aged between 10 and 23 years, who had a varying severity of illness. He evaluated the effect of a 20-minute session of manual therapy on chest excursion, FVC, FEV1, peak expiratory flow rate and oxygen saturation. After manual therapy, thoracic excursion increased and overall small increases were seen in FVC and FEV1, although these were not statistically significant. A statistically significant increase in PEFR was found.

Similar results were seen in the Borghesen and Slovik (1989) study (reported in Viberk 1989). Kolokowski, Taylor and Hoffstein (1989) studied male patients with emphysema. They monitored oxygen saturation during treatment, and for 45 minutes following physiotherapy treatment. Their relaxation treatment aimed to improve thoracic mobility and to assist in respiration. They found a small, but statistically significant increase in chest expansion post treatment.

All the above studies were performed on patients with normal neurology and obstructive lung disease. It is therefore difficult to relate these studies to patients with neurological deficits, and those presenting with restrictive lung disease. This study, therefore aimed to investigate these patients using the same measuring parameters.

METHOD

Two subjects who had undergone neurosurgical procedures were chosen and consent was gained for their participation in this study. The two were also medically stable. Each subjects’ Forced Vital Capacity (FVC) was taken immediately before and after treatment in a seated position. Their oxygen saturations were also taken before, during and after treatment.

Procedure for measurement

Each subject was seated in either his or her wheelchair. Subjects were then asked to take a deep breath in and then to breathe out for as long as possible. Subject A was able to use a spirometer orally, while for Subject B the spirometer was attached to a catheter mount and then placed onto his tracheostomy tube. The subjects repeated this procedure after a 30-second rest, three times. Oxygen saturation was measured in both using a finger probe.

Method of treatment

Subject A was treated daily for four days. Subject B was treated daily over two weeks and two days. Neither subject was treated during the weekend.

Treatment consisted of 45-minute sessions, aimed at improving selective control of the trunk and pelvis by increasing muscle activity and normalising tone (trunk mobilisations). This was predominately performed in side lying, sitting and standing (see Figures 1, 2 and 3). Treatment could not be standardised, as it was not appropriate to use every position at each treatment session and the method of facilitating trunk activity required adaptation according to the patient’s presentation.

Figure 1 Side lying

Side lying Subjects were facilitated by the therapist to perform active/active assisted upper trunk (ribs and thoracic spine) movements, into flexion/extension whilst maintaining a stable pelvis.

Figure 2 Sitting

Sitting Subjects were assisted to perform selective lumbar and thoracic spine, pelvis and rib cage movements to regain as normal symmetrical alignment as possible.

Figure 3 Standing

Standing An Overstreey standing frame was used to enable the subjects to stand while abdominal and gluteal activity was facilitated through therapeutic handling.

This was performed with the aim of increasing postural control and normalisation of tone within the trunk.

A 72 year old lady, CD, was admitted to A&E on 17 April 2002 complaining of lower limb weakness. She was CT scanned in the A&E department and found to have TB (tuberculosis) of the spine with an abscess at T3. She was then transferred to a specialist neurosurgical unit and on the 19 April 2002 this abscess was removed via a thoracotomy and then fixed via pedicle screws. CD was known to have abnormal thyroid levels prior to this, with no other prior medication history. Post operatively CD developed acute respiratory failure requiring intubation and mechanical ventilation on the neurosurgical intensive care unit. She developed chest infections, multi-resistant staphylococcus aureus (MRSA) and unstable arrhythmias. Ten days post operation CD had a percutaneous tracheostomy inserted. She was weaned off mechanical ventilation at the end of June and transferred onto surgical wards in July. Her tracheostomy tube was removed in the beginning of July, a couple of days prior to her participation in the study.

CD presented with low tone quadraparesis right greater than left. He was also beginning to demonstrate some increased tone in his lower limbs particularly hamstrings graded as two on the Ashworth Scale on knee extension. He was able to recruit some active trunk, upper limb and lower limb movement but with ataxia and therefore had decreased co-ordination of movement on all activities. He was unable to sit independently and was dependent for maximum assistance for all transfers. TT was being seated in a tilt-in-space seating system with head support and tolerated sitting out for a two hour period twice a day.

Treatment concentrated on the recruitment of abdominal muscle activity, through anterior posterior pelvic tilt in sitting, and in standing. In side lying facilitation of co-ordinated upper limb and trunk movements was carried out while maintaining a stable pelvis.

TT’s FVC was tested pre and post treatments for twelve days. He was seen on a daily basis apart from Saturday and Sundays.
RESULTS
Patients FVC results shown, are an average of the three recordings pre and post treatment. The graphs below show Subject A’s and Subject B’s Force Vital Capacity (FVC) pre and post treatment. Subject A chose not to perform a FVC post treatment on Day 1. Days 1 and 2 were a Thursday and Friday respectively with Day 3 being the following Monday. Both subjects show an increase in FVC post treatment compared to pre treatment with both showing baseline increases in pre treatment FVC over time. An Unrelated t-test was used on data from Subject B (This was unable to be performed for Subject A) with t = 1.38, df = 22, showing the results to be statistically significant (p < 0.05) for a one-tailed hypothesis. In both studies pre, during and post treatment oxygen saturations fluctuated between 99-100% daily.

**DISCUSSION**

The Forced Vital Capacity of these subjects following treatment could be seen to have increased over a series of measurement sessions. In Subject B this increase was also proved to be statistically significant. It is also interesting that both subjects’ Forced Vital Capacity dropped after a weekend where both did not receive physiotherapy. The significance of this finding however, would need to be further investigated in a future study. Subject A’s results demonstrated very little increase in baseline pre-treatment measurement over time. She was a 72-year-old who had undergone a thoracotomy and therefore it could be speculated that age and her thoracic surgery had had an affect on her lung compliance, as demonstrated in these results. Pryor and Webber (1998) write, ‘Reduced lung volume is an almost universal finding following upper abdominal surgery or cardiocorahic surgery’, They also comment that with ageing ‘tissues become less elastic…and FVC fall with age’.

Although efforts were made to use similar measuring parameters as those from previous studies, this was found to be unworkable. The measurer did not have access to a volutograph (as used in the two manual studies) and was therefore unable to take reliable objective readings of chest expansion.

The advantage of the spirometer used, was that it was very easy to implement clinically. It also provided a quick and easy outcome measure that was simple to replicate. Following the study the nursing staff and physiotherapists continued to take Subject B’s FVC to use as a weaning tool. It would also be useful in future studies to use spirometers that take both FVC and FEV readings simultaneously.

It is possible that both patients daily increase in FVC’s were due to training effects and further work is needed to discount this option. It is also difficult to rule out that the patients improved lung volumes were not due to other variables. Further work using an ABA design, a longer study or further case studies would assist in exploring this.

**CONCLUSION**

In this limited study, it was found that by working on patients’ trunk posture and stability an improvement is in lung expansion is gained. However, further work is required to explore this hypothesis further.

**REFERENCES**


**ADDRESS FOR CORRESPONDENCE**

Karen Baker
Senior Physiotherapist
The National Hospital for Neurology and Neurosurgery
Queen Square
London
WC1N 3BG
email: karen_baker7@ahdyrox.co.uk

**CASE STUDY A**

<table>
<thead>
<tr>
<th>Day</th>
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**CASE STUDY B**

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**ARTICLES IN OTHER JOURNALS**

**ARCHIVES OF PHYSICAL MEDICINE AND REHABILITATION**

2002 Vol 83, No 9


2002 Vol 83, No 10

*Braihan E et al. Inter- and Intra-observer Reliability of the Ashworth Scale and The Disability Assessment Scale in Patients with Upper Limb Post Stroke Spasticity* pp 1349-1354.

*Miyai I et al. Long-Term Effect of Body Weight Supported Treadmill Training in Parkinson’s Disease: A Randomized Controlled Trial* pp 1370-1373.

2002 Vol 83, No 11


2002 Vol 83, No 12

*Oike Y et al. A Clinical Test of Stepping and Change of Direction to Identify Multiple Falling Older Adults* pp 1444-1451.

**AUSTRAILIAN JOURNAL OF PHYSIOTHERAPY**

2002 Vol 48, No 4


**AUSTRAILIAN OCCUPATIONAL THERAPY JOURNAL**

2002 Vol 49, Issue 2

Postgraduate courses

For the third issue of Synapse (Autumn/Winter 2002), a large number of universities, which offer postgraduate courses for physiotherapy related to neurology were contacted, and each was given the opportunity to give a summary of their courses, duration, cost, etc. A further two universities are included here.

<table>
<thead>
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<th>UNIVERSITY OF NOTTINGHAM</th>
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<tr>
<td><strong>COVENTRY UNIVERSITY</strong></td>
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<td><strong>Course title</strong></td>
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<td><strong>email</strong></td>
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<td><strong>Institution address</strong></td>
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<td><strong>How long has the course been running?</strong></td>
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<td><strong>Mode of delivery and assessment</strong></td>
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</table>

**UNIVERSITY OF NOTTINGHAM**

**Course title** | Movement Science Based Approach to Stroke Rehabilitation |
| **Contact** | Julie Rowland, Course administrator |
| **email** | julie.rowland@nottingham.ac.uk |
| **Institution address** | Division of Physiotherapy Education, School of Community Sciences, Clinical Sciences Building, Nottingham City Hospital, Hucknall Road, Nottingham NG5 1PB |
| **How long has the course been running?** | Since 2002 |
| **Mode of delivery and assessment** | This is a single module at masters level, which may be taken as part of the MSc in Continuing Professional Development or as a stand alone module. Teaching is delivered over a five day period, followed by two weekends, two and three months later. Independent learning occurs by guided reading and completion of the case study (written and presented); 4,000 words which is used to assess the module. |
| **Brief content overview** | The module examines and illustrates the application of a movement science based approach to the analysis and training of the motor performance of neurological patients. The primary focus is on stroke rehabilitation, although the information is transferable to the rehabilitation of other neurological patients. A critical analysis of the relevant movement science literature and measurement of motor performance underpins all aspects of the module. In order to improve students’ analysis of functional movements, the normal and abnormal biomechanics and motor control of walking, sit to stand, reaching, manipulation and postural adjustments will be examined. The process of choosing appropriate training strategies based on the findings of the analysis will be discussed. Facilitation of motor skill acquisition will be discussed and practiced. Causes of decreased force production and changes in muscle tone following stroke will be examined, as will strategies for preventing secondary musculoskeletal changes. The module will incorporate the use of training techniques to increase strength and cardiovascular fitness following stroke, and to increase variability of motor control. A critical element of the module will be the opportunity to apply the concepts of the approach to patients with stroke, with guidance from experienced tutors, in a considerable number of clinical sessions. |
| **Cost** | £750 |
| **Duration** | Nine days, spread over three months |
| **Award** | 20 masters level points |
MINUTES
Meeting opened at 10.30 am
1. Apologies
Professor Ray Tallis (attending in Australia)
2. Minutes from 2002
Carnival not proposed. Proposed by Karen Bould and seconded by Rowena Wright
3. President’s report
Read by Anthea Dendy
4. Chair’s report
Read by Anthea Dendy
5. Treasurer’s report
The vote for staying with the current accountants was carried by the membership.
6. Re-election of officers
• Louise Barnett – remains as Chair
• Nicola Hancock – PR and Vice Chair
• Cherrie Kilbridge – Honorary Secretary
• Mary Cramp – Research Officer
• Alison Bali Falkan – moves to Menin Secretary
• Jo Tuckey – moves to Menin Secretary
• Jackie Newitt – Honorary Treasurer
• Louise Gilbert – CIGLC Representative for ACPIN
• Cassie Gibson – Coordinator
• Emma Forbes – nominated by Ros Cooke: nominated by Naomi
• Ros Cooke: nominated by Joanna Nesbitt: nominated by
• Cassie Gibson, seconded by Susanne Walker.
7. AOB
• Volunteered to review a book. Any interested party to seek out Louise for further information.
• Anthea Dendy formally thanked Louise Barnett for taking on another year as Chair; thus facilitating a smoother ‘hand over’ period to the Vice Chair.
• The Academy Working Group is addressing four questions:
  1. Are there any new technologies to be applied in clinical practice?
  2. Are there any theoretical reasons why current management advice based on basic science and clinicians do not occur?
  3. Are there barriers to such a dialogue and in particular do clinicians have difficulty getting involved in large collaborative projects with basic scientists?
  4. And finally, are there any recommendations that can be made to address this?
Ken Hammond recently contacted ACPIN concerning the lack of support by ACPIN members in the publication of NICE Guidelines for stroke and particularly, the stroke unit. There is a need for the certification of the draft guidelines before the final document is published. This is our opportunity to demand improved services again for our patients. "I am keen to hear from members who are interested in reviewing these documents on behalf of ACPIN and the CSP. There has been concern that the CSP Standards published last year do not incorporate all of our own standards, and there is a proposal to review both documents to evaluate the need to rewrite our own Standards Booklet.

Figures 1 to 3 show that cycling courses remain our largest expenditure (£1,282). Synapse has traditionally been our second biggest expense and this year fuel expenses and administrative costs have continued to rise and we now equal it.

The CSP’s website was set up in 2001 and early years maintained costs of £432 are now part of the ACPIN expenditure.

A break down of the courses run in 2002 is shown in Figure 4.
of expenditure it is essential that ACPIN maintain sufficient reserves (see figure 6). Increasing administrative costs and travel expenses, along with the expenditure on national courses, led to the Executive Committee last year agreeing to the following measures that should enable ACPIN’s resources remain adequate:

- An increase in the membership fee of £2.50 brings the current rate to £22.50.
- A reduction in the number of national and executive committee meetings from eight to five per year to decrease expenditure on travel costs and administration.

Copies of Accounts for 2002
Full copies of the ACPIN accounts are available on request.

Vote for Accountants
Voted to retain current accountants for 2003
Charles Cochrane A.C.P.
Hugh Bennett A.C.P.

INCOME 2002

<table>
<thead>
<tr>
<th>Income</th>
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<tr>
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Figure 2

EXECUTIVE COMMITTEE

Laurie Bennett
Chair ACPIN

Following the AGM in Northampton on March 22nd, 2003, four new members were voted onto the committee. The new committee is as follows with the supporting statements from the new members below:

- President
  - Ray Tellis
  - Honorary Chair
    - Simon Bennett (agreed for one additional year)
  - Honorary Vice Chair
    - Nicola Hanover
  - Honorary Treasurer
    - Jackie Newitt
  - Honorary Secretary
    - Cherry Kilbride
  - Honorary Research Officer
    - Mary Cunningham
  - Honorary Minutes Secretary
    - Alison Bailey Hallam
  - Synopsis Coordinator
    - Louise Dunthorne
  - CIC Liaison representative
    - Louise Goedert
  - Committee member
    - Jo Tuckey
  - New Committee member
    - Ross Cox
  - New Committee member
    - Jo Nesbitt
  - New Committee member
    - Emma Forbes
  - New Committee member
    - Louise Dunthorne

Figure 3

Jo Nesbitt
I am a senior physiotherapist working part time in a neuro-rehabilitation unit in Southampton. This allows me to work with patients suffering from a variety of neurological conditions. It has enabled me to appreciate the valuable role a physiotherapist and the NDT can play in facilitating an improved quality of life for those clients. The other part of my job as an extended scope practitioner in the stroke team allows this. I am involved in post and pre-assessments, injecting and educating therapists within the Wessex region. I also teach on an ad hoc basis on the neurology module at the University of Southampton. I am just completing a masters degree in rehabilitation studies. This has complemented my clinical role well, encouraging me to challenge myself in all aspects of my work, to reason and intervene and enhance the physiotherapy evidence base. My research project is focusing on aerobic exercise with patients with multiple sclerosis, an area currently not well understood. Although this project is only on a small scale, it has had very significant results. It has also proved very valuable in understanding the research process, appreciating recruitment difficulties and providing a strong basis on which to expand in the future. The interest in research has also meant that in my post I have been involved in a study looking at falls following stroke and the validation of a falls assessment tool for use in the future. I am very interested in maximising the efficacy of our profession by enriching the evidence behind what we do. I have been a member of the Wessex ACPIN committee for five years and currently hold the position of Chairperson. We are an active committee organising regular evening lectures and courses. We are currently linking with NANO to widen the breadth of topics that we cover. ACPIN offers an opportunity to strengthen my professional relationship with other clinicians in the area and gain insight into current research that is occurring within neurophysiotherapy. Within a role on the Executive Committee I hope I can bring my experience of research and further enhance links and become involved in the issues pertinent to us as physiotherapists in neurology.

Emma Forbes
At present I am a senior physiotherapist working in a multidisciplinary and busy outreach rehabilitation team. I have been part of this team for four and a half years. In my role I have patients but also teach Senior II therapists, rehabilitation assistants and students. I am actively involved in the neurology clinical effectiveness network and at present have submitted our latest literature review for publication. I have been a member of ACPIN for four years and have been on the Executive Committee I hope I can bring my experience of research and further enhance links and become involved in the issues pertinent to us as physiotherapists in neurology.

Anne McDonnell
I have been a member of the Scottish Regional Representative for the last ten years and am currently working as a Clinical Specialist at the National Hospital for Neurology and Neurosurgery.

I have been an active member of ACPIN since 1992. More specifically, I was Membership Secretary and Regional Representative for East Anglia in ACPIN in the mid 90s and since moving to London in 1999, I have been the London ACPIN Committee, becoming Regional Representative from 2000 onwards. I am keen supporter of local and national ACPIN events. I have attended most of the local ACPIN events.

20

21
ACPIN RESIDENTIAL CONFERENCE

**Movement dysfunction in the upper limb... can we manage it? A delegates perspective**

Sally de Porte

Scot & Irish ACPIN

I was ‘invited’ to provide a summary of the two day conference and hope my perspective will encourage others to attend these enjoyable conferences in the future.

**Organisation**

The number of applicants for the conference exceeded all expectations and unfortunately 50 people were unable to join us because the lecture room was suitable for only 200 delegates! As it was, a few members had to stay down the road in another hotel as the Hilton was fully booked with delegates and those unfortunately few ended up in the same hotel as the English reserve rugby team! Jo Telley did a splendid job organizing the conference, especially in light of the challenge of accommodating all.

**The programme**

This was very comprehensive addressing physiologic, psychological and environmental influences on upper limb function with a variety of different professionals presenting their perspectives.

Ass’t of causal thought had gone into the planning as each speaker made reference to other speakers and unnecessary repetition was avoided. On Day 1 the conference started with two lectures centring on the complexity of biomechanics and motor control followed by lectures on the role of vision, cognition and pain on reaching and manipulation.

On Day 2 the focus was on clinical reasoning and treatment intervention. There were a range of lectures covering dynamic stability of the shoulder, management of tone and movement patterns, proprioception, analysis of walking and dressing, management of the subluxed shoulder and finally an excellent summary by JD Dawson on ‘Why do arms also take so long to recover?’ Although unnecessary repetition was avoided there was a common message being shared by the lecturers acknowledging the vast and complex nature of upper limb function and the need to provide meaningful and frequent opportunities for patients to become engaged and motivated in using their arms in task specific training.

Both Dr Margaret Mayston and Dr Jo Manden talked about the complexity of the connectivity of circuits and their influence on function, highlighting the essential role of the corticospinal system for independence and synchronised activity and how this is task driven. Stewart Hodgson, Jacqui Clark and Alex Horley all talked about the importance of dynamic stability and how changes in muscle architecture with disease, misuse and immobilisation adversely affect movement and upper limb activity. Catherine Cornell cited lots of evidence about the efficacy of therapy and that the site of a lesion will effect outcome. She also stressed the importance of arm activity to patients’ sense of well being, as did other speakers who emphasised how central arm function is to social and cultural interaction and independence. Lester Jones provided evidence on how the stress of living independently can increase the perception of pain and he emphasised the importance of achieving attainable goals. Dr Pauline van Velst broke down the cognitive components required in reach to grasp and suggested this knowledge could be applied to treatment strategies such as improving force production, temporal control, initial hand position and using bilateral hand activities with specific patients.

Dr Jll Ramsey highlighted the role of the upper limb in weight-bearing activities and the evidence for improving proprioception through improved muscle strength and control. It was good to hear from the occupational therapists viewpoint too as both Sue Stephenson and Jo Dawson talked about how motivating function can be and that opportunity, repetition and often necessity can be used to optimise recovery.

We also heard from Helen Hill and Susan Corino who presented their research papers and added further evidence for practice on recovery.

**Social aspect**

As usual at these events you end up meeting up with colleagues and friends, many of whom you may not have seen for years. The noise of all the chatter and laughter seems to become louder as the conference progresses and all hope my perspective will be considered by the committee and, for example, at a smaller one day course with only a few delegates, full handouts may be possible. There are a number of new members on the committee and we wish them well with the future ACPIN events and thank you for your continued suggestions, feedback and support.

**Summary**

The conference proved to be very stimulating and the lectures were often refreshingly presented both Drs Margaret Mayston and Jo Manden talked about the complexity of the connectivity of circuits and their influence on function, highlighting the essential role of the corticospinal system for independence and synchronised activity and how this is task driven. Stewart Hodgson, Jacqui Clark and Alex Horley all talked about the importance of dynamic stability and how changes in muscle architecture with disease, misuse and immobilisation adversely affect movement and upper limb activity. Catherine Cornell cited lots of evidence about the efficacy of therapy and that the site of a lesion will effect outcome. She also stressed the importance of arm activity to patients’ sense of well being, as did other speakers who emphasised how central arm function is to social and cultural interaction and independence. Lester Jones provided evidence on how the stress of living independently can increase the perception of pain and he emphasised the importance of achieving attainable goals. Dr Pauline van Velst broke down the cognitive components required in reach to grasp and suggested this knowledge could be applied to treatment strategies such as improving force production, temporal control, initial hand position and using bilateral hand activities with specific patients.

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We also heard from Helen Hill and Susan Corino who presented their research papers and added further evidence for practice on recovery.
We are concerned about:

- Promoting research which focuses on the needs and concerns of people with neurological conditions and the organisations that represent them.

The Neurological Alliance:
- Concerns widely to identify issues and concerns.
- Influences policy by communicating and working with central and local government and other decision-makers and opinion formers.
- Encourages close working between health and social care organisations and professionals and voluntary organisations.
- Publishes briefing, reports and other documents.
- Educates members and others through conferences and seminars.
- Acts as a forum for collaborative action to benefit people with a neurological condition, their families and careers.

The organisation

The Neurological Alliance is large in scope - we have 50 organisations in membership of the Alliance, but small in entity with only four part-time staff. Our links and influence extend beyond the member organisations in a number of ways - through the increasing number of regional neurological alliances, through our more formalised relationships with a wide range of professional associations and through new work to support the development of the National Service Framework (NSF). The Vision

Minister said when announcing the scope of the NSF in June that users and carers should be central to the newly designed services developed through the NSF. We reiterate that this will be a focus of our work for the next few years.

We have established an NSF Interest Group within the Neurological Alliance which includes many member organisations. This Group meets three to four times a year and an email list. We will also be connecting groups of service users and carers to consider concerns coming out of the External Reference Group (ERG) who are developing the NSF.

Standards of care

A group within the Neurological Alliance have fully revised the standards of care document originally published in the mid 1990s. The new version entitled Leveling Up was launched in May and we have heard it is very well received. We have a Standards of Care Project Officer, whose role is to promote and develop the standards of care document.

Future plans

Our key aims for the future are:
- Improving standards of care. The Neurological Alliance presently has an unexploited opportunity to pursue one of our main aims of securing higher quality standards of care for people with neurological conditions. Our key goal for 2002-4 will therefore focus on this area of activity. We aim to develop, implement and influence standards of care for people with neurological conditions. We will achieve this through:
  - Having a maximum influence on, and involvement, in order to secure a useful National Service Framework (NSF).
  - Involving people with neurological conditions.
  - Forging closer relationships with other relevant organisations and with local government and other decision-makers and opinion formers.
  - Defining and identifying high quality standards of care through the development and promotion of our own standards of care document.
  - Developing the capacity of local regional alliances in order that they can facilitate the development of standards of care locally and ensure the implementation of the NSF.

Introduction

The NICE Quality Improvement Committee for Clinical Excellence (NICE) organises the development of national multi-professional guidelines. Clinical guidelines form part of the evidence base from which practitioners work and are systematic developed statements to assist practitioners and decision makers about appropriate health-care for specific clinical circumstances.

The Government expects these guidelines to be implemented into clinical practice and has funded the Commission for Health Improvement (CHI) as one mechanism for overseeing this. The professions must provide a considered perspective of care that the physiotherapy provides, so that guideline topics are being developed and how the guideline will be implemented.

How to get involved in national multi-professional clinical guidelines

NICE announces its work programme on its web site, and invites national organisations to sign up as stakeholders. The CSP does this on behalf of the profession for topics of relevance to physiotherapists.

Several guidelines are currently being developed of particular interest to members of ACPIN:

- Senior guideline for tumours of the brain and central nervous system
- Clinical guideline for the management of Parkinson’s Disease
- Clinical guideline on wound care

Since NICE was established, the Society has registered with 33 guidelines. This constitutes a massive work commitment by the Society on behalf of the profession.

Below are four web sites that help National guideline development showing how topics are selected, how guidelines are developed, which guidelines are being developed and how the CSP is involved.

- For more information about how topics are selected, go to www.nice.org.uk/nice consultation 2002.
- For more information about the process of guideline development, go to www.nice.org.uk/cat.asp?r=22334.
- For a list of all the guidelines NICE is developing, go to www.nice.org.uk/nice consultation 2002.
- To find out more about how topics are selected, go to www.nice.org.uk/catrows. asp?o=2005.

NICE encourages the work of stakeholders in all areas of guideline development and promotes the involvement of people with neurological conditions and the organisations that represent them.

How you can help

There are two key areas where members can assist:

- Firstly by supplying what key clinical questions relating to physiotherapy need to be answered by the guideline. Relate any questions to the ‘scope’. Tell us what interventions/medications need to be addressed.

- Secondly, by involving the Society to unpublish reports or consensus statements (including any printed in a Cochrane newsletter). NICE organises an extensive search of electronic databases where most medical information is stored. However there may be unpublished evidence or information not on electronic databases. The Society needs help in identifying these.

- For many NICE topics, physiotherapists are part of the team who help in the management of patients with these diagnoses or conditions, rather than being confined to the professions in that role. The Society needs clinicians (all of grades and experience) to offer observations on the problems associated with each guideline topic.

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The Chartered Society of Physiotherapy
Annual Congress and exhibition
defining practice

Friday October 17 – Sunday October 19 2003
International Convention Centre, Birmingham

ACPIN will be hosting a programme at this year’s Congress focusing on the developments in the treatment and management of progressive neurological disorders.

We are pleased to welcome many eminent speakers, including Dr Diane Playford who will open the programme by considering the speakers, including Dr Diane Playford who will open the programme by considering the

Professor Ann Ashburn will present the evidence for the treatment of Parkinson’s disease. Dr Martin Turner will give a review of a co-ordinated approach to motor neurone disease and postural management for patients with progressive disorders.

ACPIN is one of nine special interest groups who will have programmes running concurrently. Following the success of the fringe meeting last year, ACPIN are currently making arrangements for a similar meeting for an open debate on an appropriate ‘hot’ topic to be arranged nearer the time.

As in previous years we look forward to an excellent trade exhibition, and this year’s keynote lecture from Tanni Grey-Thompson, Britain’s most successful wheelchair athlete.

Look out for the booking forms in Frontline.

NB: When completing your application forms please tick clearly the ACPIN CIG box.

ACPIN receive a capitation fee for all members who indicate on the form their membership of ACPIN. This income is essential for ACPIN to be able to host programmes at these events.

Further information will be available shortly on the ACPIN website and the full programme is on the CSP website.

Academics may be best able to help, as it will involve considering if the best available evidence has been included. There are four weeks to respond.

How you can help
You don’t need to read it all consider:

- Is physiotherapy rehabilitation involved? Yes/no.Is it in sufficient depth?
- Is the wording correct?
- Are there any inconsistencies in interpretation of the evidence?
- What is the practical value of the guideline?

Stage 4: final draft
This is the final opportunity to comment on the guideline, be warned – it is the longest document (typical documents are 150 pages 44 size). There are four weeks to respond.

How you can help
At this late stage NICE will only accept comments on major omissions or mistakes based on our previous submissions. You don’t need to read it all, the process of development of the guideline is not for consultation. Consider:

- Is physiotherapy rehabilitation involved? Yes/no
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Research forum
Mary Comp
ACPRN Honorary Research Officer

This issue we have two regular features, STATES NOTE and WEBSOURCE and an introduction to the process of obtaining ethical approval. In addition, we get underway with our research survey for 2003, we report back on the research survey of 2002. The ACPRN research bursary scheme is now running and is open to members in two year’s standing. The next submission deadline is the 31st September 2003.

Details can be obtained from:
Mary Comp
School of Health and Biociences
University of East London
Romford Road
Stifford
London E17 4LZ
or email mary.comp@talk21.com

ETHICS – A BEGINNERS GUIDE

Sarah Tyne | Nic ACP
Clinical Specialist Research Physiotherapist, Preovic Acute NHS Trust and Centre for Rehabilitation Science, University of Manchester

One of the key stages in doing research is obtaining ethical approval. Each area has an ethics committee who provide independent advice to research subjects (participants), researchers and anyone else who is involved in the research process. They are independent and not part of the NHS, civil service etc. They consist of lay people as well as health care professionals. The ethics committees’ purpose is to protect the dignity, rights, safety and well-being of all actual or potential research participants. Any research that is done in the NHS needs to obtain ethical approval before it can begin. The way in which ethics committees work was outlined in 2002 in part of the NHS Research Governance Framework (www.doh.gov.uk/research) and some change is still going on. The process I will describe below is correct as of December 2002.

You need ethics approval for any research that involves NHS patients (past, present or future); records of NHS patients; use of NHS premises or facilities (including staff) and student research. It’s also involves NHS patients, facilities etc. You need not ethics approval for audit, service development, data collected as part of everyday clinical practice.

What does the ethics form involve?
There are plans for a standard ethics form for the whole of the NHS but this has not yet come into practice (December 2002). At present, you need to obtain a local ethics form from your URC. The URC ethics form tries to cover every type of research that may be done. It is not inter-changeable that much it will not apply to any individual study. Also, many of the questions apply to tools which have the potential to be harmful or unpleasant to the participants like drug trials or one involving medical investigations such as X-rays or biopsies.

The ethics forms need to give the ethics committee members (which includes lay people) enough information to know what you intend to do, why you are doing it and how you are going to do it. The application form will also include guidance about how to complete the form. There are usually comprehensive and relevant.

Follow them carefully!
In the application form you will be asked for (amongst other things): - A proposal which gives an outline of why the research is needed and what research questions it will answer, what you will do, whom and what tests will be done - A consent form (if appropriate) and tests will be done when and to whom

A consent form and details of how consent will be obtained. Many ethics committees have a standard consent form which they will see you use, which saves you designing your own

• A participant information sheet that goes to participants (if appropriate) and information they need to decide whether they wish to take part in the study. It will include why the research is needed, what will be asked of you to get contact and help with completing the form. Getting ethics approval can be time consuming – it usually takes two-plus months to get approval. Part of the reason the process is lengthy is that ethics committee members usually sit once a month so every month you have to submit the research form (depending on how much research is going on in the area). It is therefore important that you make sure you don’t miss a deadline. Contact the URC ethics officer to find out when the committee sits and the deadlines for submissions early on. Getting ethics approval can be frustrating, especially the first time until you get the hang of the procedures and the form but it is an essential part of any research.

Get help and advice from the URC officer and/or a local experienced researcher (not necessarily a physiotherapy researcher) before you submit the form. It is well worth getting a layperson to read the information sheet before you submit it to see whether it makes sense to them and gives them the information they feel they would want if they were participating.

If the study involves more than one locality in a multi-centre study?
If the study involves more than one research site within the same strategic health authority, you apply for ethics approval in the main locality (as above), when that has been approved you then apply to cover locally for approval in each of the other sites. There is a form to be completed – see www.corec.org.uk or contact the MREC (as Local ethics but it just goes to a different committee and inevitably multi-centre studies are more complex than single-centre studies.

Tips for Pain-Free Ethics Approval
• Ethics approval is essential and often time consuming. Expect to take at least two months (probably more) and include this in your time scales.
• Contact the URC ethics officer early on to find out the deadlines for submissions and work to them.
• Take care to complete the form correctly and completely. You will have to fit the ethics committee’s system, not the other way around.
• Follow the guidance notes with the application form.
• Get the advice of the Local Ethics (URC) Department early on for advice and information.

If possible get an experienced researcher to proof read the application before submission, or get their advice as you go along.

Get a lay person to read the information sheet to ensure that it makes sense to a ‘non-medical person’. It should be possible to explain anything in layman’s language. The ethics committee will not accept that it is too complex or difficult to explain simply.

Don’t be surprised or upset if clarification or rewrites are asked. Although you have probably been thinking about the study for a long time and are very familiar with it, it may not be so obvious to outsiders.

At the same time as applying for ethics approval, approach the local R&D officer to find out what procedures are necessary to get R&D approval/registration. This is also required before data collection can start.

• Like most things, the first time is the worst! Once you are familiar with the process, the form, the issues etc., it is easy.

Research Subgroup
In 2001, the ACPRN clinical committee decided that the association needed to have a new of research and associated activities within the membership to be able to address issues related to government agenda and professional growth. So, in 2002, we asked members to make a survey attached to the membership form if they had been previously involved in research, currently involved in research or planning to be involved in research. The survey was divided into three main sections. Section 1 focused on subject, area and methodology of research. Section 2 looked at funding and post-graduate training of those currently involved in research and those intending to get involved in research about timing, funding and general reason for their research. With the start of a new year, it seems an opportune time to feedback here or you some of the findings of the survey.

302 questionnaires were returned and all questionnaires were processed and included even if sections were not fully completed. 175 people completed Section 1 where they marked as many items as applied to the research subject, area and methodology. Although primarily interested for those previously or currently involved in research, 49 potential researchers completed this section and are included in the analysis. Figure 1 and 2 (overleaf) show the response to questions about research subject and area. 36% of respondents were interested in stroke while 20% ticked the ‘other’ box. Subjects mentioned included brain injury (in an omission on our part), treadmill and pulpy issues and issues regarding neurophysiological interventions (44%) and service delivery (24%) were the most frequently occurring research areas.
working in the NHS. 28% intended to be active within six months, 21% within one to twelve months but 49% had a unknown timescale. For 30%, their research would be funded but the majority would be non-funded. The majority envisaged that they would do their research as part of work, 20% planning to do their research as part of an educational course.

As many of you already know, we are continuing this exercise in 2003 and plan to do so at least another year. It is important for our professional practice that we continue to make a commitment to research. Professor Tallis has already made a commitment to research with the National Health Service in the last year and the majority of you have followed his lead. However, those who had or have plans to do so for at least another year are increasing in number.

Thank you for your time in completing the questionnaire and we will keep you informed about the outcome.

Methodologies employed were more diverse and as proportion of the total number of responses ranged from 7 to 11%.

118 people completed Section 2 indicating that there were currently involved in research. 27 people also completed Section 3 (intending to get involved) but the majority had plans to start their research within six months. 70% of those currently involved in research were employed in the NHS and 54% were funded. 23% indicated that they were funded by charities, 29% funded by other sources and the remainder were funded by their employees. NHS regional/units funds or research councils. 15 individuals were named fundholders suggesting that the majority were not directing the research. Table 1 shows the postgraduate qualifications of those involved in either funded or unfunded research. Those who had or have plans working towards post-graduate qualifications were in the majority. 122 individuals registered that they were intending to get involved in research. The majority (67%) were

Table 1

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<th>RESEARCH SUBJECT</th>
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<th>Non-funded research</th>
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<tr>
<td>MSc</td>
<td>21%</td>
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<td>PhD</td>
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One of the major issues that needs to be addressed is the maintenance of the joint range. There is much physiological basis for the process involved in losing passive range of motion (Ada and Canning, 1999). Studies on animals have provided information about the length associated changes in muscle with immobilisation (Frank et al, 1984, Halbertsma et al 1999, Williams 1988). Muscles are immobilised in shortened postures required by housing arrangements. This results in a shorter muscle adapted to its new imposed length. Contractile tissue in muscle also undergoes remodelling. The relative increase in muscle connective tissue that occurs as a result of immobilisation in the shortened postures suggested contributes to the stiffness seen in short muscle. This increase is thought to be more attributable to the length of muscle fibres than to the immobilisation. It has also been shown that immobilised has an effect on joint stiffness (Frank et al, 1984). Changes start occurring within the joints, fibro-fatty tissue proliferates and forms adhesions as it matures to cause tissue. Articular cartilage becomes attached to this tissue and begins to degrade. Chemical changes consistent with osteoarthrosis then show. Extra articular tissue such as ligaments also lose their mechanical properties.

A number of studies have been undertaken to try to ascertain the amount of time a joint must be mobilised to prevent these changes. These ranges from 15 seconds, repeated four times in athletes (Roberts and Wilson 1999) to 6 hours in immobile patients with cerebral palsy (Tardieu et al, 1998). There is no consensus on this at all.

There is debate about the lasting effect of stretching on muscle and joint range in a range that encompasses fit athletes to immobile patients. One study of fit young athletes suggest that the acute effects of repeated passive stretching are negligible. However a very

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'was also done on a very small sample much longer period of time than movements (Tardieu et al 1988), and the use of passive stretches (Ada and seems to be little evidence to support 32 on nursing home residents with more spring loaded passive joint mobiliser length, with the associated loss in reducing contractures already present. A randomized experiment by Williams (1988) showed that 15 minutes of passive stretch daily did not prevent reduction in muscle length, as the associated loss in joint range could not be accounted for when contractures. These patients were passively stretched on the mobiliser for three hours daily. Out of the 28 patients in this study, only one showed an increase in their range of movement, one patient similarly lost range of movement.

Discussion From the literature there seems to be little evidence to support the use of passive stretches (Ada and Canning 1992; Harvey et al, 2000, Habertmo E and 1999). Only one article was reviewed that showed an improvement in range of passive movements (Tardieu et al 1988), and here the stretches were done for a much longer period of time than would usually be practiced by therapists, i.e. six hours upwards. This time was also done on a very small sample of six patients. There seems to be no doubt that completely immobilised joints will show physiological changes towards contracture (Frank et al, 1994, Williams, 1998). However, none of the studies looked at the effect that the process of moving and handling has on the patient perceived as being immobile. For instance all patients will be involved in the process of maintaining their personal hygiene, this could well have an effect in the maintenance of their joint range. The work by Harvey et al (1988) showed no less in range of movement in either, whether passively stretched or not, suggesting something other than passive movements must be helping maintain range of movement. Therefore there is perhaps maintenance of range of motion from patients being moved about as part of their ongoing care, and the effect of very limited input from specific passive movements is negated by this.

There is without doubt a psychological benefit from administration of passive movements (Wilson 2003). Whether this is best use of optional physical activity a confirmed additional questionable physical change. However, patients that will be very reluctant to forfeit an input that to them is a perceived benefit, no matter that the evidence for physical benefit is scant. An exploratory study in 2004 in the public domain on the following website will be www.hn.org.uk in the Research Findings Register. Williams PE (1988) Effect of intermittent stretch in muscle spasticity Arthritis of Rheumatic Disease 47 pp104-1016. 3. General principles of treatment Fanger and Edwards With an emphasis on early physiotherapy intervention, when patients are usually hospitalised the principles of treatment are described for acute and chronic disorders. The first section on management of respiratory dysfunction has been fully revised with increased emphasis on physiotherapy intervention. The second section on management of neurological dysfunctions covers principles of positioning as well as principles of movement of all body areas. Importantly it takes head of manual handling considerations.

4. Neurophysiological problems and measurement Low-load, prolonged stretch in the extremity must the soleus muscle be stretched each Ten areas of cognitive functioning are described including general and specific functional tasks. This chapter provides an updated, Ten care chapters are described and the problems, goals and treatment progression are clearly discussed for each case. 9. Posture and management and seating Pape This chapter is concerned with the analysis of problems associated with posture in sitting and the principles relevant outcomes and appropriate measurement. It began with a quick refresh as to what measurement currently is and proportioned to discussion about why to measure, how to measure and factors. The second edition focuses on the drug treatment of neurological patients including the need for evidence based practice and the difficulties surrounding these areas. Most importantly, it sets the challenge for clinicians and researchers working in neurophysiotherapy to improve the treatment and management that can be offered to neurologically impaired patients.

Overall second edition provides an extremely comprehensive summary of important day neurological physiotherapy. It is a very well referenced text although where there is no literature to support current practice it is clearly stated and the description of physiotherapy is based on the authors’ clinical experience. This second edition, which has clearly been thoroughly revised, is well worth a place on any neurophysiotherapist’s bookshelf.

6. General principles of treatment P Center and Edwards With an emphasis on early physiotherapy intervention, when patients are usually hospitalised the principles of treatment are described for acute and chronic disorders. The first section on management of respiratory dysfunction has been fully revised with increased emphasis on physiotherapy intervention. The second section on management of neurological dysfunctions covers principles of positioning as well as principles of movement of all body areas. Importantly it takes head of manual handling considerations.

2. Assessment, outcome measurement and goal setting to measure, how to measure and factors to focus on management of measurement, namely reduced, ordinal ratio and interval. This section also looked at the issues of reliability, validity, sensitivity and bias the measurement we do. The afternoon session was based around the results of a survey conducted by the ACPIN committee in preparation for the study day. It focused specifically on clinical areas and covered tone, associated reactions, gait, quality of movement and life, balance and the upper limb. This proved to be a very useful session as delegates were able to discuss and exchange views about outcomes they were currently using and Mart was able to provide the evidence to support or negate their usefulness. Overall a very useful and worthwhile day. Study day concludes recommended and a follow up course has been suggested.
can we manage it?  

21ST-22ND MARCH 2003  
HILTON HOTEL, NORTHAMPTON

A Conference to enhance our understanding of upper limb deficits and give insight into treatment and management approaches

Abstracts and biographies

**INTRODUCTION TO THE UPPER LIMB**

**LECTURE 1**

**Anatomy of the shoulder girdle and upper limb**  
Stephanie Hodgson  
Sheffield Hallam University

The incidence of shoulder dysfunction in people over the age of 65 is between 26-34% (Chakravarty and Wehlyn 1993, Chaud et al 1993) and in patients suffering a CIA the reported shoulder pain within the first year is probably over 70% (Boy et al). Thus, most physiotherapists will experience patients complaining of shoulder problems and the understanding of the dysfunction is anatomical knowledge and its clinical application.

The shoulder is a highly complex series of joints, muscles and ligaments that allow the upper limb to perform complex and integrated functions. Stability of the glenohumeral joint is maintained by several important mechanisms: capsular restraints (Lippitt and Matsen 1992), rotator cuff muscles (Howell et al 1988), dynamic control of the scapula (Mottram 1995), shape of articular surfaces (Will et al 1997), glenoid labrum (Howell and Galinat 1989) and negative pressure (Gall et al 1990) within the joint. Recent evidence has exploded several of the ‘myths’ surrounding shoulder form and function. For example, the commonly held belief that the supraspinatus muscle is an initiator of abduction is incorrect; the entire rotator cuff contributes to elevation of the arm (Shockey et al 1994).

The lecture will examine glenohumeral anatomy and the factors that influence its function both physiologically and in a pathological state. Using recent evidence, it is hoped to review anatomical knowledge and to develop a greater understanding of shoulder dysfunction present in neurological patients, therefore improving clinical management of these patients.

**REFERENCES & BIOGRAPHY**


**LECTURE 2**

**Motor control of the upper limb**  
M J Mayston MSc MCSP  
University College London

The upper limb is able to perform a huge variety of actions including the placement of our hand(s) at the appropriate place for manipulation, to transport objects from one place to another, sensory identification of objects and for balance (Carr & Shepherd, 2003). Therefore upper limb function is essential for independence and full participation in everyday life activities.

Upper limb control is complex: the seven joints of the shoulder girdle and numerous small joints of the wrist and fingers present a challenge in terms of controlling these many degrees of freedom in the neuromusculoskeletal system. Because the upper limb is linked to the trunk, other body segments are of necessity involved in its action for postural stabilisation and conversely, the upper limb itself can act to protect the body during a fall. The somatosensory system is critical, with sensory information crucial to effective hand function and vision playing an important role in the ability to reach and interact with objects.

A consideration of the motor control of the upper limb requires an appreciation of:

- the role of the hand to move to the object or scene of action,
- attention to the object and the environment,
- the required postural adjustments to ensure smooth action,
- utilisation of sensory information for task performance and object identification.

This presentation will focus on the corticospinal system which is essential for the independent and synchronised activity which enables reach and manipulation (Porter & Lemon, 1993; Bremer et al, 1991). This system is often compromised in patients with stroke (Tourtou et al, 1996; Farmer et al, 1993). Emerging evidence suggests that targeting upper limb practice can improve the possibilities of functional recovery particularly for stroke patients. Therefore an understanding of the motor control of the upper limb seems to be helpful in understanding how these strategies can be most usefully incorporated into therapy programmes.

**REFERENCES & BIOGRAPHY**


Carr J & Shepherd, D (2000) Sickle cell disease and musculoskeletal problems in young adults with Neurological Disability. She is also a Senior Researcher (pateudiatrics) and teaching at the University of Queensland, 2003 in the UK and abroad. Research interests include the use of neuropharmacological techniques to understand the control of movement in healthy individuals and changes in the neural control of movement during development and in pathologies such as cerebral palsy and stroke.

Dr Margaret J Mayston is a senior lecturer at the University of Sheffield for Physiology in 1970 (University of Sheffield) and subsequently worked at the Royal Victoria Hospital in Belfast for four years before coming to the UK. Completed an MS in Applied Physiology in 1990 (King’s College London) and PhD in 1994 (University of Sheffield). Current interests include the Department of Physiology at University College London. Dr Mayston is an Honorary Lecturer in Orthopaedics at the University of Sheffield, 2001 (MS 377 pp45-162)


**CONCLUSION**

This presentation will describe the reciprocal parieto-frontal cortical circuits involved in visuomotor processing and the consequences of lesions to these areas. Two parallel interdependent pathways will be highlighted. Firstly, the parieto-occipital and medial intraparietal areas are interconnected with the dorsal premotor cortex and sub-serves the control of reaching and manipulation. Multi-modal neurons within these areas encode the spatial location of objects relative to the observer. Neurons may also show directionally specific modulation of their firing rates. Secondly, the anterior intraparietal area is interconnected to the ventral premotor cortex and sub-serves the control of
grasping. Here neurons that encode 3D object characteristics and actions directed towards specific object types may be identified. In humans a lesion to the parietal areas described results in a deficit of visuomotor co-ordination called optic ataxia or visuomotor apraxia. In this condition deficits in reaching, hand orientation and hand prehension have been described which are not explained by a simple motor or visual deficit alone. Further, disruption between the cortical areas involved in the knowledge of objects/tools and those involved in object-oriented action may result in the symptoms seen in apraxia.

To date much research has focused on the importance of cortico-cortical circuits. However, we will conclude with evidence highlighting cortico-subcortical connections in visuo-motor processing.

REFERENCES AND BIOGRAPHY


PAULINE VAN VLIET
Paulette van Vliet University of Nottingham

Cognition in reach to grasp

This paper will first outline what is known about these cortical circuits. However, we will conclude with evidence high-lighting cortico-subcortical connections in visuo-motor processing.

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Evidence would suggest that therapy is limited in its success in restoring function post stroke with only 50% of patients regaining functional use of the upper limb.

Where are the goal posts for recovery? For some individuals it may be the restoration of function. For others it may be a limit that can be involved in bimanual activities. At the very least it should be for a limit that does not interfere with balance and functional activities such as dressing and washing and which is not aesthetically compromised. While evidence supports the efficacy of therapeutic approaches, the potential for improvement has been reached regarding the optimal treatment approach.

What stops patients achieving recovery of the upper limb? For some the size and level of the lesion will be a limiting factor for others the experience post stroke may deprive them of the opportunity to regain function.

REFERENCES & BIOGRAPHY
Heinemann Ch8 pp197-218.
meaningful ‘whole’, which in itself can be an important motivational factor for improving task performance, as can the concrete (as opposed to the abstract) nature of the tasks involved. The systems model of motor control provides a useful background for emphasizing the uniqueness of task performance arising from the interaction of multiple factors. At the simplest level these comprise individual, task and environment (Shumway-Cook & Woollacott, 2001). The therapeutic potential of the activity is considered under five main areas: Motor, Sensory, Psychological, Cognitive and Cultural and where relevant is linked to upper limb function. The physiotherapists’ role in the therapeutic use of this activity is considered and the importance of engaging individuals in purposeful activity to optimally relearn skills is highlighted.

CLINICAL REASONING AND TREATMENT LITERATURE 5.0 Management of the subluxed low tone shoulder – a review of the evidence

Alex Morley, Sheffield Hallam University

Management of the low tone shoulder remains a controversial subject in physiotherapy departments across the UK. There are many devices on the market to enable patients to maintain alignment in the subluxed glenohumeral joint. Research evidence suggests that the use of triangular bandage (Buichlo-Moodle et al, 1980), Rolyan humeral cuff (Zorzetto et al, 1995), Harris Hingemore (Brooke et al, 1991), lap board or arm trough (Buichlo-Moodle et al, 1986) may be the most effective devices at realigning the glenohumeral joint but all these devices have their limitations. Functional electrical stimulation has also been suggested to be of use in prevention of subluxation, although long term improvements remain questionable (Baker & Parkinson, 1996, Chantraine et al, 1989 and Farghaly, 1994).

With increasing evidence around muscle architectural changes with immobilisation (Williams and Golding, 1978, Tardieu et al, 1982) and disuse (Narici et al, 1998), physiotherapists have a growing evidence based rationale to help their patients determine the most effective use of interventions addressing realignment of the shoulder joint. Williams and Golding (1978) suggest alterations in animal muscle architecture with immobilization. In the shortened position these changes lose load of sarcomeres and an increase in sarcomere length, in the lengthened position it is suggested sarcomeres are added but shorter. Tardieu (1982) investigated adaptation of connective tissue in cat soleus and found shortening of the connective tissue around the muscle belly following immobilization in the shortened position. Narici et al (1998) have recorded a decrease in deep pennation angle in multi-parallel muscle and a decrease in fascicle width with disuse.

This presentation aims to outline the changes occurring in muscle architecture around the shoulder with disuse and immobilisation, moving on to suggest how consideration of these adaptations may be important in the management of low tone shoulders in the clinical setting.

REFERENCES AND BIOGRAPHY


Langton Hewer R (1987) Neurology working at the National Hospital for Neurology and Neurosurgery, London. She graduated in 1988 and whilst working in Sheffield that Alex was part of the neurology teaching team.


This close session will explore the commonly raised question of the what makes the subluxed low tone shoulder so difficult to treat, on fact, ever recover at all.

The complexity of upper limb recovery and the requirements for functional use will be revisited, along with the need to review the way in which upper limb function is measured. In addition to the neurophysiology of recovery, the impact of functional, psychosocial issues will be explored and debated.

REFERENCES AND BIOGRAPHY


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Free papers

**FREE PAPER 1**

**The effect of affordance on retraining the reach-to-grasp movement after stroke**

**RUE: A. Sunderland, P. Vincent, Division of Stroke Medicine, School of Psychology, University of Nottingham**

**Introduction** Arm rehabilitation following stroke comprises actions involving objects. Clinical practice is moving towards using meaningful objects, from using meaningless objects, with little evidence (Wu et al., 1998). Data from healthy and post-stroke volunteers indicates that both object type and context influence the reach-to-grasp movement. We recorded movement towards two high-affordance objects with that towards low-affordance control objects, twice before and twice after two weeks of home-based practice.

**Subjects** Four volunteers who had returned home following unilateral stroke were recruited. Inclusion criteria were ability to give informed consent and manage home practice.

**Rivermead Motor Assessment (arm section) > 5, able to give unilateral stroke were recruited. Inclusion criteria were home-based practice.**

**Methods** 

Both object type and context influence the reach-to-grasp movement. The patient was a 71-year-old gentleman who had no sensory deficit, a normal star cancellation test and no hemianopia. His baseline Fugl-Meyer score was 22/66.

**Results** 

The slope value (rate of recovery) for 12 of the 19 variables was higher in the RMT phase than both the baseline and 58 phases.

**Conclusion** The results of this single case study suggest that RMT has positive effects at the level of impairment and disability. Replication of this result across other individuals is needed in order to draw definitive conclusions as to its therapeutic benefit. Analysis of the other single cases in the GENTLE’s clinical trial is ongoing.

**Acknowledgements** This study forms part of the GENTLE project, which is funded under the 5th Framework of the European Commission. Partners are University of Reading (UK), University of Newcastle (UK), Staffordshire University (UK), Rehab Robotics (UK), University of Lyon (France), INRA (France), Zeiner (IL), Vogl (IL) and Trinity College Dublin (IE).

**REFERENCE**


**FREE PAPER 2**

**The effect of robot mediated therapy on upper extremity function post stroke – a single case study**

**Susan Coote**

**Regional representation**

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**REFERENCE**


**Regional reports**

**EAST ANGLIA**

Sasa Ishaya Regional representative

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**Introduction** Robot mediated therapy (RMT) involves repeated practice of a tailor made exercise programme, with the robot providing the appropriate level of assistance or resistance. This form of intervention is supported by the connectionist models of recovery (Robertson & Murie 1999) and the suggestion that repetitive, task oriented, movements lead to the changes at brain level required for motor learning (Dobkin 1998).

**Methods**

Mr G completed a baseline measurement phase (A, eight measurements), a period of RMT (B, 9 measurements) and a period of sling suspension SS (C, nine measurements). Motor Assessment Scale, Fugl-Meyer and active and passive range of motion were measured at every visit.

**Analysis**

Initially, visual analysis of the plotted data was used to identify changes in the rate of recovery. Univariate linear analysis was used to quantify the slope through the A, B and C phases.

**Results**

The patient was a 71-year-old gentleman who had no sensory deficit, a normal star cancellation test and no hemianopia. His baseline Fugl-Meyer score was 22/66.

The slope value (rate of recovery) for 12 of the 19 variables was higher in the RMT phase than both the baseline and SS phases.

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**REFERENCE**

**SYNAPSE**

**Remaining 2003 programme**

- 24 June Venue: Rehabilitation
  Single day course by PamMultiholland
- 15 September Workshop facilitated by Sharon Williams
- 11 November Spasticity study day to include lectures on pathophysiology based on pumps and botulinum toxin

As you will see, we are fortunate to again host a workshop facilitated by Sharon Williams – any of you who have attended previous workshops will appreciate their clinical value and we once again thank Sharon for her continued support.

And finally – as we are already in the throes of planning for 2004, any ideas for future lectures/courses are always welcome, so get your thinking caps on and we look forward to seeing you all at the AGM in April.

**NORTH TENT**

Alex Morley
Regional representative

North Trent has had a relatively quiet end to 2002 with one lecture in October on ‘Speech therapy in Neurosurgery’. The 2003 lectures programme commenced on the 28th October with a meeting on ‘Management of patients with Parkinson’s disease’.

**Remaining 2003 programme**

- May Vestibular function – evening lecture – speaker to be confirmed
- July Eye tramours in neurological patients – evening lecture by Dr Sue Morris
- October Reflex changes in Stroke – day course by Dr Mary Cump
- November Use of Pilates in patients with neurological problems – evening workshop by Karen Cheek

**NORTHAMPTON**

Dr N Wallis
Acting regional representative

We have had a fairly successful first year after setting up the Northampton ACPIN group. Our membership currently stands at 25-30 and new members are always very welcome, as are suggestions for future events.

We finished 2002 with a very popular and well-received evening course in Bedford by Andrew Clements from the Leicester Balance Centre on ‘Venfrom rehabilitation’. Following this in January we had an interesting MS study day at the MS Centre in Bedford which was also well attended.

We have several events planned for 2003 though some of the dates are yet to be finalized. We continue the year in February with one of the study days on the use and effects of botulinum in the management of spasticity. May, there will be a debate/dinner workshop with Jane Graham, to whom we extend our thanks for his continued support.

Other events planned for 2003 include a practical Pilates evening, an update on Parkinson’s disease, management and older people, on the neurological patient, and possibly an update on the use and effects of cannabis with respect to pain, sleep etc. Other events are also in the planning days.

We hope that we can continue to grow in 2003 and will provide an informative and interesting forum for all members.

**NORTHERN IRELAND**

Sebaki Makaney
Regional representative

Following our AGM in January we have had quite a few changes to our committee. Thank you to Pauline Glenholme who was our secretary/chairperson and welcome to Oli McGee as our new chairperson. We also have a few new committee members and we are looking forward to new ideas.

In May we have a spasticity and upper limb course with Sue Edwards. We will then have a break over the summer months. We are currently looking at new ideas for next year – all ideas are welcome.

**OXFORD**

Assadie Cooper
Regional representative

In 2002, Oxford ACPI N continued to have a spasticity study day and the committee has remained at its most affluent in recent years. In 2003, however, committees are encouraged to seek membership from all areas of the region so that we can carry out more evening lectures at venues available for members in currently underserved areas. Anyone with a little or no interest is encouraged to contact myself or Claire Gay on 01865 737872/5.

For 2003 was the circulation of a ballot outlining the programme of lectures for early 2003 and committee contact numbers. We hope to continue this procedure in the future if members find it useful.

**Remaining 2003 programme**

- Saturday 26 January Neurophysiology – a clinical approach for therapists
- Tuesday 25 February Botulinum treatment
- 28 February Rehabilitation of head function (day) – Wendy Wilson (Occupational Therapy) 
- 4th March 2003 Colleagues Support Group (Day and venue to be confirmed)
- 27 November Dyspraxia afternoon lectures

**SOUTH WEST REGION**

Gina Sargeant
Regional representative

Over the last six months the committee has continued to try to offer a range of home grown and outside speakers, this appears to have been the right way forward and popular with all. Our programmes have truly blossomed and the PR has been excellent with regular updates being put together with the AGM, at April’s meeting. The committee has continued to try to encourage you to renew your membership and please encourage your colleagues to join. ACPI do subsides on members courses the they run and non funding is available for non-ACPI funding.

**Remaining 2003 programme**

- April Brain injuries Kate Willie (Date and venue to be confirmed)
- 9th June Rehabilitation of the older patient
- 23 August Botulinum treatment of head
- 12 October Neuroplasticity related to Spasticity
- 30th November Colleague Support Group (Day and venue to be confirmed)
- 27 November Dyspraxia afternoon lectures

**SOUTH TENT**

Lindie Cargill
Regional representative

Welcome to our new members and thank you for everyone for your hard work. The current membership stands at 44 and several on the committee if anyone is interested in joining the committee we are all able to accept new members.

We have a new chairperson, our current Chairwoman our new chairperson has also selected a few new committee members and we are looking forward to new ideas.

In May we have a spasticity and upper limb course with Sue Edwards. We will then have a break over the summer months. We are currently looking at new ideas for next year – all ideas are welcome.

The committee is therefore going to ask (via a questionnaire to those attending other courses) what the members want, when they want it etc. whether they would like evening lectures at all. Anyone with any ideas/suggestions please contact any committee member, our aim is only to please.

Courses to include such a huge popular event this year, would be a day conference by Liz Mackay. Dave Fitzgerald will lead a very intensive one-day course on ‘Muscle imbalance’, reach for the anatomy bovitories, this lecture decided this might be better if repeated, spread over a couple of days to give time for more practical sessions.

With the introduction of Bobath techniques stretching into March, our next big course is a ‘Neuropathic update’ with Nigel Laurens on April 5th. We will run a course in June covering the ‘Management of spasticity and related neuropraxia’ with taking advantage of Dr Stuart Jones, including Sundeep Stark who is one of the few therapists in the country who practices. Allison Fox is booked for October 2002 and will cover the head and neck, head on trunk and its role in balance, date and venue to be confirmed. Please check for evening lectures depending on the results of our questionnaire.

**SURREY & BORDERS**

Linda de la Roche
Regional representative

We recently distributed a questionnaire to our members to establish what our members thought of last year’s programme. We had a 50% return rate and the feedback was generally positive about the level of lectures given and their relevance.

We have taken note of the fact that a number of members would prefer a later start time and that the Royal Surrey in Guildford act as a central venue for many members and will plan accordingly next year.

We still have to confirm specific topics for our remaining 2003/2004 programme and will advertise all lectures and events in Fositive nearer the time.

**SURREY & SUSSEX**

Sue Colloco Hodgson
Regional representative

I took over from Naomi in December and am just learning the ropes. I know we went on one day course ‘Co cognitive behavioural therapy in relation to brain injury’ led by Nigel Goodwin and I know I had a lot to learn and I am still learning.

In November an evening lecture on ‘Parkinson’s research’ by Bernhard Haas was excellent with good ideas to use in therapy.

We are currently planning the next programme so please send us your ideas. We have one meeting confirmed on 29th September to
discuss ‘bodies weight support treamed training’, which will be held at Brighton University. In addition we are planning a Bobath Workshop, half day led by Helen Contantine, date to be confirmed.

We are also discussing with Kent ideas for shared study days. Membership currently stands at 34. We look forward to meeting up soon!

WESSEX

Ros Cox
Regional representative

Welcome to 2003 with Wessex ACPIN. The year started well with a successful wine and cheese evening with members of NAWOT and ACPIN to discuss local developments such as research projects, MDT clinics, and future programmes for ACPIN. We would like to welcome Claire from Porton Down to the committee which should help spread ACPIN news further and allow us to hold courses and lectures at venues other than Southampton and Poole! Any other regional representatives who would like to join the committee are welcome. Most of our committee meetings are held an hour before the evening lecture so please come along and have your say about our programme or just to find out more about what is going on locally and nationally.

Remaining 2003 programme
• May: An update on Multiple Sclerosis research – Date and speaker to be confirmed
• June: Botox study day by Ipsen (Southampton) and if enough interest another venue in Wessex with Ipsen sponsorship
• 2 September falls in Parkinson’s Disease – evening lecture Emilia Slack (Southampton)
• October GBS – evening lecture GBS support group. Date to be confirmed
• November: Half day study day: Sue Edmonds, date to be confirmed

We look forward to seeing you at our lectures and study days. This year we hope to be able to subsidise the course to keep costs down and allow more ACPIN members to attend as we appreciate funding is not always available. Members who regularly attend meetings will be given priority at study days.

WESSEX

Claire Smith
Regional representative

The Wessex branch remains strong with a thirteen member committee. We continue to strive to organise a wide ranging and varied programme of events which includes day and half day study days, college course study days, ‘Body Weight Support Training’ and Half Day study days.

Remaining 2003 programme
• June 2003 Motor relearning: Lucy Smith
• September 2003 Driving assessments

The regional representative job has now been filled. Claire Smith will hold the post until May 2003, when Lu Cohen will take over the mantle! If there are any queries regarding our course programme, or joining the committee please contact Claire Smith on 0121 424 2494 or Liz Seal (soon to be Cohen) on 01904 725747.

YORKSHIRE

Caroline Brown
Regional representative

After a break over Christmas and the New Year Yorkshire ACPIN has a full, exciting Spring schedule. By the time you read this we will have hosted a study half day with Ellen on Spasticity Management and an evening lecture entitled ‘Handle with Care!’ Development of therapeutic manual handling training and guidelines.

Remaining 2003 programme
• 29 April Handling study day on Palvis and Hi Lift Meadows
• May: US study day and AGM (details to be confirmed)
• 1 November GBS – evening lecture Jacqui Chapman

Details of Yorkshire ACPIN events will be sent to each Yorkshire ACPIN member and advertised in advance. If anyone in our region has ideas for future lectures/courses please contact any committee member, or even better join the lively Yorkshire committee yourself as there will be several vacancies at the AGM. We look forward to hearing from you. For further information please contact Caroline Brown, on 01904 725747.

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:

Research report
A report which permits examination of the method, argument and analysis of research using any method or design (quantitative, qualitative, single case study or single case design etc).

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.

Review paper
A critical appraisal of primary source material on a specific topic related to neurology.

Treatment report/case studies
A report of the treatment of a patient or series of patients which provides a base line description of established treatments, or a new insight into the techniques or treatment of people with a specific problem.

Service development assurance report
A report of changes in service delivery aimed at improving quality.

Abstracts
Abstracts from research projects, including those from undergraduate or higher degrees, audits or presentations. They should be up to 300 words and where possible the conventional format: introduction, purpose, method, results, discussion, conclusion.

Technical evaluation
A description of a mechanical or technical device used in assessment, treatment, management or education to include specifications and summary evaluation.

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.

Points of view
Articles discussing issues of contemporary interest and any other matters relating to neurological physiotherapy.

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 of Synapse.

Copies should be:
• typed or printed
• double spaced
• on one-sided A4 paper with at least a 3” margin all round
• consecutively numbered
• include the name, qualifications, current position, and contact address of the author(s).
• ideally, a disk copy of the material should also be included.

Documents preferred in Microsoft Word for Macintosh or Windows.

References should use the Harvard system. In the text quote the author(s) surname and date (Boggs 1994). At the end of the article give the full references with the first author’s/surname and date (Boggs A 1994). The use of ‘endorsements in the treatment of a problem’ is not acceptable. ACPIN and the publisher do not sponsor or otherwise support any substance, commodity, process, equipment, organization or service in this publication.

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Regional representatives

**EAST ANGLIA**

Sesa Ishaya
2 Heath Cottages
The Heath
Tattingstone
Ipswich
Suffolk IP22 2LX

t: 01473 702072

e: sesa@tanisce.co.uk

**KENT**

Janice Champion
Coniston
Coniston Road
Lower Stoke
Rochester
Kent ME3 9RE

t: 01634 270 198

e: jchampion@tesco.net

**LONDON**

Sandy Chambers
Physiotherapy Department
St Thomas’ Hospital
Lambeth Palace Road
London SE1 7EH

t: 020 7928 9292

e: Sandy.Chambers@st-thomas.nhs.uk

**MANCHESTER**

Louise Rogerson
Healing farm Cottage
Buryfield Lane
Mobberley
Chester WA16 7LR

t: 01773 659917

e: louise@adl.com

**OXFORD**

Annabelle Cooper
Physiotherapy Department
Neurorehabilitation Service
Oxford Centre for Enablement
Heidelberg Orthopaedic Centre
Wendle Road
Oxford

t: 01865 737300

e: annabelle.cooper@no.angel.co.uk

**SCOTLAND**

Cassie Gibson
81,1 Duke Street
Edinburgh
Scotland
EH8 8HR

**SURREY & BORDERS**

Sally de la Fontaine
Field View Cottage
Balmes Lane
Normandy
Surrey GU3 3AX

t: 01483 234279

e: sallydelafontaine@orchard.com

**SUSSEX**

Susie Collins-Hewitt
Camden House
Hayes Lane
Stirford
West Sussex
BH93 7SQ

**WESSEX**

Ros Cox
1, Pausse Close
Ashley Cross
Poole
Dorset BH14 0NT

t: 01202 365311 bleep 294

**YORKSHIRE**

Caroline Brown
Neuroscience Unit
York District Hospital
Wiggenton Road
York YO31 8HE

t: 01904 733747

e: cazzabelle@hotmail.com