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JOURNAL OF THE ASSOCIATION OF PAEDIATRIC CHARTERED PHYSIOTHERAPISTS
NUMBER 80 AUGUST 1996

PROBLEMS OF FULL TERM INFANTS

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EDITORIAL

LIN WAKLEY
Editor

This issue deals with the two main problems of the full term new born infant that Paediatric physiotherapists encounter, congenital talipes equino-varus (CTEV) and Erb's Palsy. Many of us may only see a few cases of each in a year but each one presents it's own problems. I hope that these articles will help solve any management problems you may have encountered.

Articles on treatment and management of paediatric disorders are not the only approach but just one perspective. Perhaps you use another approach that works for you. Why not share your ideas by writing a short article or case study. It could spark some healthy debate. The editorial board considers all material submitted and tries to remain completely unbiased.

There have been several changes on the Editorial board during the past few months. Gill Riley has retired after many years on the board. She was also a member of the core team and I will miss her support, my first year as editor was helped by knowing she was at the other end of the phone. Jenny Saunders and Joy Hegarty shared the role of N. Ireland representative and they have found that with increasing home and family commitments it was difficult to attend meetings so have decided to stand down. I would like to thank them all for their hard work over the years. Their places are being filled by Gill Smith who is currently the S. West representative and Finola Beattie who has just retired as the N. Ireland representative.

At the last Editorial Board meeting it was decided that we would change the months of publication of the Journal. From 1997 the Journal will be published in March, June, September and December. The main reason for the change is so it is possible to include an up-to-date report of the National Committee Meetings. This has not been possible because, at present, meetings always occur just after the Journal goes to the printers. I felt that it was important that you as members of the association should be kept informed of matters being discussed and decisions being made on your behalf. The change will also remove the preparation of the Journal away from the major holidays, especially Christmas.

COPY FOR NOVEMBER 1996 JOURNAL MUST BE WITH THE EDITOR BY 1ST OCTOBER 1996

The board reserves the right to edit material submitted

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Dear Miss Wakley

I would like to thank Carol Hurran for her response to my letter in which I asked Physios to contact me if they have a Conductor from the National Institute of Conductive Education working in their schools.

I agree that the Conductive approach does have some benefits and initially we set up a Motor Group based on C.E. lines. A member of my staff who had attended one of Esther Cotton's courses gave advice to the teaching staff and helped them to set up the group. Physio staff helped in a Summer School on these lines. When the conductor came to the school we set up a system for discussing each child and reaching a conclusion with which conductor and physio are happy. Post operatively physios take over the care until the child is ready to rejoin the group.

I also agree that CE is an education not a therapy, but in practice the motor work does play a big part.

My decisions on how to approach the situation were made after a lot of thought, discussions and letters to C.S.P. Their information paper No. PA5 has a section on Patient Seeking Assistance from an Alternative Practitioner, which mentions Conductive Education Centres. However, our situation is different because C.E. has been brought to the children, the majority of parents not having actively sought it. I have aimed to fulfil the requirements to ensure that my actions are covered by C.S.P. Professional Liability Insurance.

If the situation of Physio and Conductors being in a school together is to occur more often, would now be the time for C.S.P. and A.C.P.C. to get together to consider the implications and draw up some guidelines.

Yours sincerely
Judy Hemming-Allen

Georgina L. Keighley
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Barnsley Community & Priority
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Dear Miss Wakley,

We have been asked by South Yorkshire Open College to formulate and validate a training module and accreditation for non-teaching curriculum support assistants in schools so to enable them to add onto their Core Training which has recently been funded.

I would like to hear from anyone else who has either been involved in or formulated such modules or holds any training courses for these educational assistants.

Many thanks
Yours sincerely
Georgina L. Keighley

Tracy Smith
Physiotherapy Assistant
The Birmingham Children's
Hospital NHS Trust
Ladywood Middleway,
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Birmingham B16 8ET
Tel: 0121 454 4851
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Dear Miss Wakley

At present I am looking into the design specifications of wheelchairs provided for children in Hip Spicas. I would be very grateful to hear from therapists who have had experience of handling children aged between 4 to 16 and are involved in supplying this type of equipment.

I would be particularly interested to know which wheelchairs you have found most suitable, and the sort of problems you have encountered.

Yours sincerely
Tracy Smith

David Thomson
Senior Paediatric
Physiotherapist
Tower Hamlets Healthcare
NHS Trust
Physiotherapy Department
Mile End Hospital
Bancroft Road
London E1 4DG
Tel: 0171-377-7874

Dear Lin,

Re: Assessment - Intervention Process

Since the beginning of this year our service has been administering the Bruininks-Oseretsky Test of Motor Proficiency (BOTMP) and the Motor Skills Inventory (MSI). These assessments have been used when children were referred because of concerns regarding gross motor skills, coordination etc.

In practice the BOTMP has been administered jointly by a PT and OT, whereas usually the MSI was administered by a physio. Recently, we held a joint PT/OT in-service to promote therapist's awareness of the BOTMP and to discuss the rationale underlying the use of the test.

The benefits of using this assessment-intervention process are that:

a) the BOTMP is a standardised test,

b) after establishing the quality of the child's skills on the MSI profile, activities can be selected from the *Body Skills* curriculum, activities that are appropriate for home or school,

c) the MSI can then be used to measure progress.

We would be grateful to hear from any colleagues who have experience of this assessment-intervention process.

Yours sincerely,
David Thomson

LETTERS TO THE EDITOR

Jennifer Green MSCP
Wendy England MCSP
Physiotherapy Department
The Avenue School
Basingstoke Road
Reading
Berkshire.

Dear Miss Wakley,

We are physiotherapists working in a special school with children from age 2 - 19 years. It is our policy to stand the children daily in the classroom, using upright standers in nearly all cases.

When the children are small both physiotherapists and classroom assistants can cope with this 'standing routine'. However, as the children become heavier and larger, we are experiencing great problems lifting and placing the most disabled children into their stands - especially those unable to weight bear.

We are mindful of the lifting and handling regulations and although we have looked at various hoists we have been unable to identify any which we can use safely to assist a child or young adult to be placed in and taken out of a standing frame.

Are other physiotherapists experiencing the same problem? Do they have any solutions to our problems? If so, please write and let us know.

Yours sincerely
Jennifer Green MCSP
Wendy England MCSP

Carol Kerry
Superintendent Paediatric
Physiotherapist
Woodview Child Development
Centre
Crow Wood Lane
Widnes WA8 0LZ
Tel: 0151-424-4454

Dear Lin

With reference to my case study on Beal's Syndrome in the May '96 Journal, I understood there would be a medical viewpoint describing the condition and its aetiology. However this unfortunately could not happen.

The original references mentioned were:-

"Beals R.K. and Hecht, F.: Delineation of another heritable disorder of connective tissue. J. Bone joint surg. (Am.), 53:987. 1971."

"Hecht, F., and Beals, R.K. "New" syndrome of congenital contractural arachnodactyly originally described by Marfan in 1896. Paediatrics, 49:674, 1972."

and a further 2 are:-

"Anderson, R.A., Koch, S., and Camerini-Otero, R.D.: Cardiovascular findings in congenital contractual arachnodactyly: Report of an affected kindred. Am. J. Med. Genet., 18:265, 1984."

"Ramos Arroyo, M.A., Weaver, D.D., and Beals, R.K.: Congenital contractural arachnodactyly. Report of four additional families and review of literature. Clin. Genet., 27:570, 1985."

Perhaps this could be printed so anyone wishing to find out more has somewhere to start?

Thanks
Carol Kerry

Dawn Pickering MCSP
13 Peny Bryn Road
Cyn Coed
Cardiff CF2 6QS

Dear Lin
I am writing to enquire if there has been a delay in printing of the APCP Journal. I have only now received my February and May '96 editions.

Is it not possible these can be sent out centrally, like our Physio Journals to avoid these delays.

Yours sincerely,
Dawn Pickering MCSP

Lin Wakley
Editor

Dear Dawn

Thank you for your letter regarding the delay in you receiving your February and May Journals. They were printed on time and sent to the regional representatives at the beginning of February and May as usual. I believe the Welsh Journals were sent out late because your regional representative has been ill.

As to the issue of central mailing of the Journal, this has been on the agenda of the editorial board for sometime. We have already investigated the possibility of introducing it but there are several other matters which must be sorted out before we can go ahead with it.

I can assure you that it will be introduced as soon as possible.

Yours sincerely
Lin Wakley

Sue Mackey
100 Ethelburt Avenue
Southampton SO16 3DE

Dear Lin,

I am writing as I have been in touch with a German paediatric physiotherapist working in Barbados. Her name is Nicole Babitsch and she is looking for willing volunteers to work with her at a child development centre in Bridgetown where there are not enough local therapists.

She is looking for therapists who are Bobath trained and would like to work out there for 3 - 6 months, mornings only with free accommodation.

They cannot offer living expenses or wages but it is a very nice environment to work in and very worthwhile.

Do you think we could put a notice in the APCP journal for her with any enquiries addressed to:

Nicole Babitsch
Child Development Centre
Jemmotts Lane
Bridgetown
Barbados
Telephone : 001809 4369027

Yours sincerely
Sue Mackey

(CLUB FOOT)

DI COGGINGS
Supt. of Paediatric Physiotherapy Services
Mile End Hospital
Bancroft Road
London E1 4DG

INTRODUCTION

Despite club foot being a "known" condition as far back as the time of ancient Greeks, it still probably remains one of the most difficult of all common congenital anomalies to treat fully successfully, its cause remains unknown and its treatment empirical. Confusion can arise because of a failure to distinguish between conditions that can produce a similar deformity, whilst the underlying cause can be very different. It is therefore of the utmost importance to try and rule out any underlying cause, as the latter can affect the outcome of the type of treatment chosen. The fundamental problem is one of treating a deformity that is in three planes and can involve several joints at the same time, and probably one of the most important things not to forget is that the deformities can constantly change under the influence of growth.

AETIOLOGY

The incidence of club foot is approximately 1-3:1000 live births.
The male : female ratio is 2.5:1 and 50% are bilateral.

Multiple theories of cause have been proposed, and although these remain unclear, new views are beginning to emerge.

There are three aspects of the aetiology which should be considered:-

(1) The Effects Of Intrauterine Moulding.

This would not explain the calf-wasting usually present. It would however, acting as an environmental factor, increase the chances of more severe deformity if the foot was unable to move.

(2) Nerve and Muscle Imbalance.

Handelsman and Badalamente (1981) and others have identified differences in muscle fibre type, with a high proportion of Type 1 fibres compared with controls. In addition, there is an increased amount of fibrosis and reduced excursion of these muscles. The common association between foot deformities and such conditions as meningo-myelocele makes neurological imbalance a probable primary aetiological factor.

(3) Delayed Development.

Studies have shown that as a foot develops in utero, it passes from a position of equinovarus to calcaneovalgus. The vascular anatomy at this time also changes, and if the growth of the foetus is arrested for some reason, then the foot is deformed.

On conclusion, there is no single cause for club foot. There is a high familial incidence, suggesting an inherited anomaly. This anomaly could be vascular or neurological, resulting in a delayed maturation of the foot, and a subsequent imbalance between the dorsi and plantar flexors of the foot, and the resulting position could be made worse by a form of intra-uterine moulding.

PATHOLOGY

The pathology of club foot consists of four components, and these are always important to remember when considering the type of conservative treatment:-

1. Bony abnormalities.
2. Muscle imbalance.
3. Reduced muscle excursion.
4. Joint deformities and subluxations within the foot.

DIAGNOSIS AND ASSESSMENT

Like most orthopaedic conditions Club Foot is treated differently in different centres. However, it is of the utmost importance to be able to assess the foot, prior to treatment. Methods of treatment also vary, often relating to the person/people looking after the baby and what they believe "is right" and they feel most experienced in carrying out. Strapping, manipulations or plaster correction may be started early, followed by early or later surgery, depending on the ideas of the surgeon. These operations can vary, from being extremely limited in some centres and radical in others. I believe that as most club feet are different, the need for ongoing assessment is essential.

A diagnosis of club foot is usually (and should be) made at the time of the baby's birth, and can be made pre-natal with routine ultra sound. The latter diagnosis enables parents and professionals to prepare themselves for what is to come.

It is important to be able to describe the foot at birth in terms of mobility and fixed deformities, and secondary, to be able to notice and record changes that occur as a result of treatment.

Various methods of measurement of the deformities have been reported, but probably the easiest two to follow are:-

(1) Harold and Walker. (1983).

Group 1 = No fixed deformity.

Group 2 = Less than 20^0 fixed equinus/varus.

Group 3 = More than 20^0 fixed equinus with varus/cavus/supination.

(2) Catterall. (1991).

Type	Resolving Pattern	Tendon Contracture	Joint Contracture	False Correction
HIND FOOT				
Lateral Malleolus	Mobile	Posterior	Posterior	Posterior
Equinus.	No	Yes	Yes	Yes
CREASES				
Medial	No	No	Yes	No
Posterior	No	Yes	Yes	Yes
Anterior	Yes	No	No	Yes
FOREFOOT				
Lateral Border	Straight	Straight	Curved	Straight
Mobile	Yes	Yes	No	Yes
Cavus	+/-	+/-	+/-	No
Supination	No	No	Yes	No

Examination Findings

The clinical picture of club foot is characteristic, but can vary from being "mild" to "severe", the former being relatively mobile and the latter fixed and rigid, or as in Catterall's definition, from a "resolving pattern" to that of "joint contracture". A "false correction" will be discussed later.

TREATMENT

Parents have to come to terms with the birth of the baby with club foot, which can often be dramatic and difficult, especially when the child is first born.

Parents will nearly always ask if the child will walk. The child may be a little late, usually due to their lower limbs being in plaster, either following surgery or due to conservative treatment, but the child will always walk unless there is an underlying neurological problem. Time for discussion with parents/carers must always be put aside, not only to describe plans of treatment, but also to explain that the foot may always be small, with some restricted movement, and the calf thin.

Conservative Treatment

Conservative treatment should be started as soon as possible, after initial assessment has been made. It is also useful to have a photograph taken to remind "all" what the foot was like at birth.

The question is what method should be used and if using, what sort of splintage? The main aspects of conservative treatment are:-

1 To try and correct the deformity.
2 To try and restore movement.
3 To maintain the correction obtained.

Whatever type of conservative treatment is decided upon, it should be initially concentrated on the forefoot, and no attempts should be made to correct the hindfoot equinus. Movement should be centred in the mid-tarsal area and at the talo-navicular joint. Only if and when mobility has been restored in the mid-tarsal area, with straightening of both the medial and lateral borders of the foot, should correction be started on the hindfoot. Too much force, especially attempted on all joints at the same time, can produce swelling, (when strapping and/or splintage should always be removed immediately), persistent equinus, breeching of the foot in the mid-tarsal area and often an anterior ankle crease. This type of false correction is often called the "bean - shaped" foot or "rocker - bottom", and should be avoided at all times.

There are various methods of conservative treatment, the most common being:-

1 Gentle Stretchings and Manipulations

For the tendon and joint contracture type of club foot, I believe that at least the first 5 - 7 days should be treated using this method. A newborn baby's club foot can be extremely stiff and rigid and applying strapping or plaster enables no movement at all. By teaching parents/carers the exercises below, repeated several times per day, will improve mobility prior to applying strapping and reduce the risk of swelling, which only means that the foot has been traumatised.

Techniques

A. Midtarsal Abduction

Fix proximally anteriorly (over talus and navicular).

★ Mobilise forefoot into abduction.
★ Mobilise forefoot into abduction and eversion.
★ Apply traction to forefoot with correction into abduction.
★ Pronate forefoot if supination is present.

B. Hindfoot Eversion

(1) Fix proximally posteriorly around malleoli.

★ Mobilise navicular forwards and downwards.
★ Apply A/P pressure to talus.

(2) Fix proximally anteriorly around malleoli and talus.

★ Mobilise calcaneus into eversion.
★ Mobilise calcaneus into eversion and apply downward traction.

C. Dorsiflexion

Fix proximally around flexed knee.

★ Move foot into dorsiflexion mobilising with pressure through heel not through forefoot.

D. Tactile stimulation of lateral border of foot and lower leg

2 **Robert Jones Strapping**

I find this method is best used on the resolving club foot, where the forefoot is reasonably mobile. The parents/carers are taught gentle stretchings as in 1., which are done regularly throughout the day. Care must be taken not to over-correct the foot, and the tightness of the strapping itself must only be put on to where the foot can be held with 1 finger, so there is no force used on the foot. A bean-shaped, or rocker bottom foot, is usually produced by attempted hindfoot correction, using the forefoot as a lever, and this is very easily done using this type of strapping on a rigid foot.

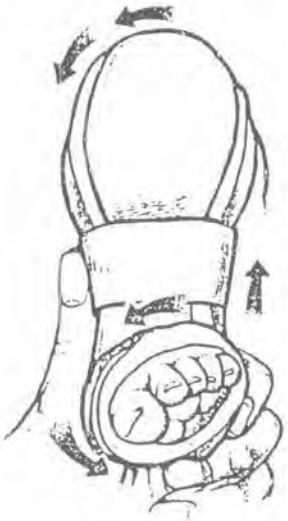


Diagram 1

Application of Robert Jones Strapping

Materials

Tinc. Benz. Co.
Cotton Wool.
7 mm thick adhesive surgical felt.
2.5 cm wide zinc oxide strapping.

Method

Apply Tinc. Benz. Co. liberally over:-

1 The dorsal and plantar aspects of the foot.
2 The thigh, above the knee to a depth of 3 cm, or more if a larger child.
3 Both sides of the lower leg.
4 Around the anterior and posterior aspects of the lower leg, between the knee and the malleoli.

Felt

(a) FOOT Take a piece at least 2.5 cm wide and put it round the foot, the distal edge level with the base of the toes, and with the join in the midline of the dorsum of the foot.

(b) KNEE Put a longer piece of felt of the same minimal width over the top of the **fully flexed** knee and down either side of the lower leg, leaving a space of at least 2 cm above the malleolus on both sides.

Fixation

Apply the strapping over the felt, starting at the lateral edge, crossing to the medial and round the plantar aspect; then up over the knee, still fully flexed, and down 2/3 of the medial aspect of the lower leg. In doing this, pull the foot with eversion into dorsiflexion. If necessary a second piece of strapping may be applied on top of the first, to increase this correction.

Then put another piece of strapping round the calf, further to tighten and to anchor the vertical pieces. This piece should go round twice, one on top of the other.

Circulation

The peripheral circulation must be checked before the child leaves the Department. If after 10 minutes and with the child at rest, the foot, or any part of it, is dusky, check to find the impediment and make the necessary adjustment. If the foot remains dusky after this, take everything off **gently** and start again.

Frequency

Felt and strapping are applied once a week and the correction tightened by strapping on top twice or once during the following 4 days. On the 7th day remove the strapping and felt, leaving the leg free for 24 hours.

The main correcting force is applied around felt-protected forefoot, so that the free end of the strapping emerges on the lateral side to continue up, above and over the flexed knee to be fixed to the medial side of the calf. Sometimes a second strip is placed from medial to lateral around the heel and again continued over the knee. The prolongation over the knee is used for added security of fixation and in the belief that when the child kicks an added dynamic force is transmitted to the foot.

Parents/Carers can usually be taught how to overstrap after a few weeks, reducing the number of visits.

3 Velcro - Strapping

This is a modified type of Robert Jones Strapping. I prefer to use this method until the forefoot is reasonably mobile. It allows the position of the foot to be adjusted on a daily basis and stretchings/manipulations are easier to perform once the velcro has been removed, thus attaining more mobility.

Tinc Benz and Felt are applied as in Robert Jones Strapping, but then instead of using Zinc Oxide Tape, velcro is used as below:-

Self-adhesive velcro - hook strip is placed on top of the felt. Gently stretching the foot into its corrected position, attach a piece of velcro - loop strip onto the velcro - hook, starting medially inferiorly on the lower leg, over the flexed knee, down onto the lateral border of the forefoot, underneath and around the foot and back up over the whole dorsum, finishing laterally. The lateral and medial ends below the knee are then anchored down. This is the opposite way to applying the Zinc Oxide with Robert Jones, thus avoiding over correction, as in Diagram 2.

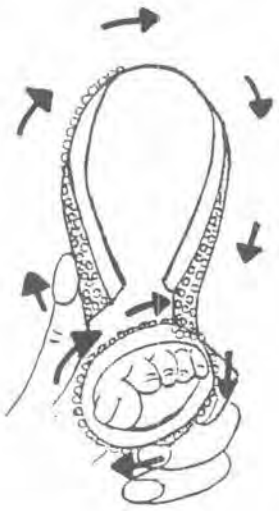


Diagram 2

4 Plaster of Paris

This is still a fairly common technique used, especially by Orthopaedic Surgeons who do not work alongside Physiotherapists. However, I believe that this method has its limitations. The main contradictions to this method are:-

- ★ Stiffness.
- ★ Inability to do stretchings/manipulations.
- ★ Skin problems.

I do not believe this method should be used initially, and the preferred usage is either when trying to maintain a corrected foot, or in the foot that has relapsed minimally, does not require surgical correction, and the foot is too big to strap. The plaster must always be applied over a flexed knee to the top of the thigh in a child who is not walking. If a below knee cast is applied in the younger child, it is likely he/she will either kick it off or the foot will slip inside the plaster.

5 The Articulating Ankle-Foot Orthosis

This is a fairly new orthosis, made by Camp, designed to be adjusted in all three planes to the deformity. The splint is made up of:-

(a) A sole plate-anterior and posterior.

(b) A leg strap.

(b) A thigh strap.

These structures are connected and hinged to one another by complex mechanical systems, allowing firstly adjustment according to the morphology of the lower limb to be treated, then the mobilisation and fixing of each segment of the limb in relation to the other on all three planes, apart from the flexion/extension of the knee, which is obviously only on a sagittal plane. The foot is strapped onto the sole-plate using non-elastic adhesive tape (preferably Zinc Oxide), and usually changed weekly.

The advantage of this device is its three dimensial adjustment.

6 Neuromuscular Stimulation

This is still being used minimally, however I believe that if the parents will allow and if the foot is reasonably mobile, it can be used as part of the Physiotherapy Programme. Small electrodes are placed on the skin over the dorsi-flexors and evertors and weak impulses stimulate the muscles.

7 Ilazarov Technique

This is always done by an Orthopaedic Surgeon. The Ilazarov frame comprises of a series of metal rings held together with rods and fixed to the bone from several directions by thin wires under tension. By adjusting different components of the frame over a period of time, the foot can be moved into a new, acceptable position. The preference for using this is usually on the stiff, uncorrected foot that has already under gone surgery.

Complications of Non-Operative Treatment

1 Failure of correction - recognised.
- unrecognised.

2 "Bean Shaped" or "Rocker-Bottom" foot, caused by attempted hindfoot correction using the forefoot as a lever.

3 Skin problems.

4 Stiffness.

5 Delayed surgical correction, resulting in additional surgery +/- stiffness.

6 Insufficient surgery.

CONCLUSION

Although the cause of club foot is unknown, there is nearly always a degree of muscle imbalance from an early stage. The variability of this imbalance implies that a standard method of treatment is not appropriate for all cases.

I believe that the amount of mobility that the foot gains with conservative treatment is as important as the correction of the deformity itself. Conservative Treatment can cause stiffness, leading to more radical surgery, likely to cause fibrous tissue, and the result is a vicious spiral of increasing stiffness.

Assessment and a means of recording the club foot of a newborn baby is of utmost importance. If the "type" of deformity can be identified, specific treatment can be established and hopefully the predicted outcome more reliable both for those treating the foot, and not least, for the parents.

References:

Handelsmann J.E. and Badalamente M.A., 1981 - Neuromuscular Studies in clubfoot. *Journal of Paediatric Orthopaedics*. **1**:23-32.

Harrold A.J and Walker C.J., 1983 - Treatment and prognosis in congenital club foot. *Journal of bone and joint surgery*. **65B**:8.

Catterall A. 1991 - A method of assessment of the clubfoot deformity. *Clinical Orthopaedics and Related Research*. **264**:48-53.

CLUBFOOT - THOUGHTS ON CURRENT SURGICAL MANAGEMENT

MR J. MARK H. PATERSON FRCS
Consultant Orthopaedic Surgeon
Director of Orthopaedics and Trauma
Royal London Hospital

The role of surgery in the management of clubfoot remains controversial, with differences of opinion over the indications for operation. Even when the case for surgery has been successfully argued, there are likely to be disagreements with respect to timing and the extent of surgery.

Why is this?. One of the problems is that there is still no universally-accepted method of assessment of the complex group of deformities which we know as clubfoot. Consequently, it has been virtually impossible to compare results of different treatment regimes from different units. There is certainly an urgent need for an objective quantitative method of evaluation of the clubfoot deformity.

The traditional approach in the UK is exemplified by the policy of early surgical release popularised by Lloyd-Roberts. The outcome of a strapping or casting regime is evaluated at the age of about 8-12 wks. Failure to achieve correction at that time leads to a posteromedial release, followed by further strapping or casting to maintain correction. Using this method, Reiman has reported 86% satisfactory results 4-11 years after posteromedial release performed at 12 wks.

A contrary view has been taken by Ponseti, who urged the adoption of an aggressively conservative treatment programme characterised by careful and prolonged casting, supplemented by minor surgical procedures only when necessary. Success here lies in the ability to appreciate the various components of the deformity and correct these in the sequence of cavus, adductus, varus and finally equinus. Percutaneous sectioning of the tendo Achillis is performed if the equinus element cannot be corrected by manipulation and serial casting. At the age of 2-3 years, persistent forefoot supination is treated by tibialis anterior transfer. A recent long-term follow-up study of patients treated in this manner appears to vindicate the method. 78% of patients enjoying an excellent or good outcome at a mean age of thirty years.

The middle ground could be said to be occupied by Turco and his followers, who advocate radical release and correction at around one year of age. One argument in favour of this approach is that the child is able to help maintain correction by walking soon after the treatment. However, by this age, correction is hindered by the definite incongruity of the joints of the foot, and radical surgery is required to achieve correction which frequently needs to be maintained by temporary wire fixation.

Clearly, there is no one right or wrong method. However, it is essential that the underlying pathological anatomy is appreciated, and that each one of the four components of the clubfoot deformity - cavus, adductus,

varus and equinus - is addressed appropriately. Successful non-operative treatment remains the ideal, but the surgeon must be prepared to deal appropriately with failure to achieve correction of any of these elements. Thus, in a typical posteromedial release, residual equinus is dealt with by lengthening of the tendo Achillis and posterior capsulotomy of the subtalar and ankle joints; residual varus is addressed by tibialis posterior sectioning; and residual cavus and adductus is treated by release of medial and plantar tethers together with open reduction of the talonavicular joint. Tendon transfers, and bony procedures such as calcaneal osteotomy (Dwyer) and calcaneocuboid fusion (Dilwyn Evans), may be indicated for residual deformity at a later age. A residual mobile forefoot adductus is unlikely to represent a problem; however, recurrence of the hindfoot deformity may recur up until the age of 7 or 8 years.

OBSTETRICAL BRACHIAL PLEXUS INJURY (ERB'S PALSY)

This work, on Obstetric Brachial Plexus Palsy, has been a collaborative effort by Dr. Tillotama Biswas (previously Paediatric Assistant, Stoke Mandeville Hospital), Dr. Catherine Noone (Consultant Paediatrician, Stoke Mandeville Hospital), Margot Arthurton (Paediatric Physiotherapist, Stoke Mandeville Hospital), and Lydia Dean (freelance Occupational Therapist, working at the Royal National Orthopaedic Hospital, Stanmore).

It is appreciated that neither the Protocol, nor the Treatment Management are definitive, and comments from readers would be welcomed.

Submitted by:
MARGOT ARTHURTON MCSP
Sen. Paed. Physiotherapist
Children's Centre
Aylesbury Vale Community Healthcare NHS Trust

INCIDENCE:

This condition occurs in 0.3 per 1000 births, in areas with good medical facilities. The incidence is 4 per 1000 births where medical facilities are poor.

CAUSES:

1 Overweight infants in the cephalic presentation.

2 Underweight babies in the breech presentation.

3 Difficulty of shoulder delivery.

4 Forceps delivery.

5 Occasionally no cause is apparent.

The damage is usually due to the forceful widening of the angle between the neck and shoulder. The strongest force is at C5, and it decreases down to T1.

CLASSIFICATION (based on examination 2-3 weeks after birth)

Group 1

Injury: to C5/C6

Paralysis: Shoulder abduction and external rotation.
Elbow - flexion.
Forearm - supination.
Wrist - extension.

Recovery: Commences from 0-1 month, and is usually accomplished between 4-6 months, occasionally longer.

Group 2

Injury: to C5/C6

Partial injury: to C7

Paralysis:

Shoulder - abduction and external rotation.
Elbow - flexion and extension weakened.
Forearm - supination.
Wrist - extension.
Hand - fingers and thumb movements are reduced or missing.

There may be an associated Horner's Syndrome, with drooped eyelid, lack of sweating on the cheek, and diminished pupil size on the affected side.

Recovery:

1. Commences from 0-1 month plus, and starts with the shoulder and elbow flexion.
2. The patient may develop contractures of the shoulder into adduction and internal rotation which may require surgery.
3. There may be shortening of the humerus by 2-3 cm by the age of 6 years.
4. Recovery is slower than in Group 1.

Group 3

Injury: to C5/C6
C7
C8/T1

Paralysis:

1. The whole arm is affected at birth.
2. At one month:
   a) Shoulder is flail, lacking rotation.
   b) Elbow - flexion and weak extension.
   c) Wrist - extension.
   d) Hand - tightly fisted - extensors and thumb abduction affected.
   e) Horner's sign is present.

Recovery:

1. 0-12 months.
   Shoulder - slow, no recovery of external rotators.
   Poor function.
2. 3-4 months
   Biceps activity apparent.
3. 8 months - improvement in biceps activity.
4. 14-15 months - general improvement in function.

Recovery statistics:

15% recover satisfactory function.
30% show flexion deformity of the elbow and decreased shoulder movements.

Group 4:

Injury: from C5 to T1

Paralysis: Complete, with complete sensory deficit below the elbow.

Recovery:

1. 6-8 months - the extremity is flail, with half open hand and no finger movements.
2. 12 months - some finger function may appear.
3. Shoulder: held in internal rotation.
   Elbow: flexion contractures of up to 45^0 occur, with some flexion ability, but no extension ability.
   Forearm: fixed in supination. There may be anterior dislocation of the radius at the elbow.
   Wrist: ulnar, deviation.
   Hand: 'claw' deformity.

If the wrist extensors have recovered, there will be finger grasps by a tendonesis effect. The sensory deficit will improve with time.

CONCLUSION:

The child will be seen from day one. The progression of the treatment will be decided by the therapist in conjunction with the Paediatrician and/or the Specilist in Brachial Plexus Injury who is situated at Stanmore Orthopaedic Hospital.

Please see the Physiotherapy Protocol for further information.

PROTOCOL FOR OBSTETRIC BRACHIAL PLEXUS PALSY (ERB'S PALSY)

Referrals

These are taken by telephone call from the ward on the day of birth, backed up by a written referral by the referer at a later date.

The children are seen immediately whenever possible. If not, they will be seen at least once before the mother is discharged home and then followed up in the community.

Medical and Background Information

All relevant medical information will be obtained from the medical notes. Any further information will be obtained by interview with the parent/s, the General Practitioner, and Health Visitor.

Most referrals will be made for assessment of range of movement, education regarding the condition, and condition management.

Venue for Assessment and Intervention

The initial assessment will be undertaken on the ward prior to discharge. Further assessments and intervention will be undertaken either at the Children's Centre or in the home environment.

Equipment

The equipment necessary for assessment and treatment will be available in the Children's Centre and will include a treatment mat and toys as appropriate.

Those present at the Assessment and Intervention

The assessment, where possible (and if appropriate) should be undertaken with both parents present. Siblings may attend if this is appropriate, at a later stage.

Documentation

All information will be kept within the physiotherapy patient notes and entered on the appropriate forms. Copies of the reports will be sent to the hospital consultant, GP, and paediatric OT as appropriate.

Assessment

This will include:

1. Observation of the posture of both upper limbs.
2. Awareness of the presence of fractures, if any.
3. Measurement of passive range of movement of both upper limbs.
4. Observation of colour, oedema, skin condition and temperature of the skin.
5. Observation of functional use (this at a later stage).

Intervention

This will include:

1. At birth, initial management of the affected upper limb re positioning, washing, movement, skin care, sensory stimulation,

2 Reassessment at two weeks post injury re: active/passive range of movement.

3 Taking the affected upper limb through passive range, each joint being gently taken through full range.

4 Sensory stimulation.

5 Explanation and teaching of the parents in order that the same regime may be carried out frequently at home.

Where recovery is minimal in the first 4-6 weeks, the physiotherapist or GP will recommend a referral to a paediatrician. When recovery remains poor/slow then the paediatrician may make a referral to Mr. Rolph Birch, Peripheral Nerve Injury Unit, Royal National Orthopaedic Hospital Trust, Stanmore.

Future Management

Where recovery is evident, then the child will be followed up for two years - after which time one would expect full recovery. During this time Range of Movement will be monitored as will the developmental milestones. Functional use will also be observed and advice provided regarding bilateral use and the "normal" use of the affected limb. Where there is residual weakness an exercise regime will be provided to strengthen the affected upper limb.

It may also be considered necessary to provide information to the parents regarding the Erb's Palsy Self-Help Group.

PHYSIOTHERAPY REGIME

Process for Referral

The Children's Centre will receive a telephone call from the ward on the day of birth, and the physiotherapist will see the child on that day whenever possible. At this time the therapist will identify the presence or absence of movement of the upper limbs and record the details.

Initial Management

1 The therapist will introduce herself to the parent/s and explain her role.
2 The therapist will explain the condition, ensuring that the explanation is given regarding recovery in language that the parent/s understand.
3 Be aware of any anxieties that the parent/s may be experiencing.
4 Reassure the parent/s that there are many ways in which they can assist their child's recovery, and that most babies recover well, but slowly.
5 In the first two weeks the arm, forearm, wrist, hand, and fingers should be supported in a neutral position and rested to allow initial post trauma recovery. It is important to note that during this time the affected upper limb may be moved gently for washing, dressing, and skin care of the baby (paying special attention to skin folds).
6 During the first two weeks sensory stimulation is vital, and can be provided through stroking, tapping, alternating warm and cool temperatures on the skin, and different textures to the skin of the arm. Special attention should be given to the areas of the triceps, scapula/humeral area, flexor surface of the forearm and elbow joint, and the palmar surface of the hand, fingers, and thumb. This may be undertaken as frequently as six times a day.
7 A follow up appointment will be given to the parent/s for the baby to be seen at the Children's Centre two weeks after discharge from hospital.

Post Acute Management

1 Reassessment of the presence or absence of movement will be made and improvement recorded.
2 Passive movements to the affected upper limb will commence, ensuring that each joint is taken gently through full range of movement. These movements can be undertaken with the child in either supported side lying or the supine position. Specific attention should be given to external rotation, abduction and elevation of the shoulder, supination of the forearm, flexion of the elbow, extension of the wrist, and abduction of the thumb. When taking the shoulder into flexion one must ensure that the point of the scapula is held firmly towards the spine, so that the tissues forming the rear wall of the axilla, and internally rotating the shoulder joint, do not become shortened.
3 Continue sensory stimulation as before:
(This regime can be undertaken up to six times per day as before).
4 The frequency of treatment will be decided by the therapist, dependent of the degree of severity and the rate of recovery.

5 Regular reassessment will be undertaken and documented.
6 After the age of six weeks one can encourage prone lying for short periods of time. **(This must be when the child is awake and supervised).** This will encourage weightbearing through the shoulder girdle.
7 As improved patterns of movement are established, one should encourage the strengthening of those muscle groups slow to recover. It is essential to maintain tissue length and joint mobility whilst awaiting recovery.

Minimal Recovery

If recovery is minimal during the first six weeks, it may be necessary to refer the child to a Paediatric Consultant. This may be done directly by the therapist or by the child's General Practitioner.

Should recovery remain poor/slow up to three months then the consultant will refer the child to Mr. Rolph Birch, Consultant Orthopaedic Surgeon, Peripheral Nerve Injury Unit, Royal National Orthopaedic Hospital Trust, Stanmore. After this, the regime for intervention will be directed by him and his rehabilitation team.

Spontaneous Recovery

Recovery may continue for up to two years, and may proceed with periods of progress and where the recovery plateaux. It is important to monitor the developmental milestones throughout this period, even though these should not be seriously delayed.

During this period of recovery specific activities may need to be used to encourage fixation of the shoulder girdle and activity of the rotator cuff muscles, eg., crawling. Bilateral hand function should also be encouraged + +. The therapist will also need to identify those muscle groups that are weaker, and attempt to strengthen them, eg., shoulder elevators, lateral rotators, supinators, elbow flexors. There may be some persistent residual weakness of the muscles, and it may also be noted that there is shortening of the affected upper limb.

The therapist would expect to discharge the child with good recovery at approximately one year of age.

Support

The therapist will decide when it is appropriate to refer the parent/s to a support group, as the timing of such referral is vital, and it may be advisable to refer the parent/s at a later date if necessary.

Distribution of this Regime of Intervention

The local consultants will be aware, and have approved, of this regime of intervention. It will be made available to the appropriate medical and paramedic practitioners involved in the care of the baby, including the transfer of care if appropriate.

ERB'S PALSY ADVICE FOR PARENTS

WHAT IS ERB'S PALSY?

Erb's Palsy causes difficulty of movement of the arm and hand as a result of damage to the nerve supply.

HOW DID IT HAPPEN?

It happens during the baby's passage through the birth canal.

HOW LONG WILL IT TAKE TO RECOVER?

This is difficult to predict. Most babies recover full movement, but nerve growth is very slow - so do be prepared for weeks or months. Most babies recover well, but slowly. However, some babies may be left with some residual weakness of the affected arm and hand.

THE TREATMENT PLAN:

1 First you will be shown how to place your baby's arm in a well supported position, and how to stimulate the skin surface.

2 After 2-3 weeks more active treatment will commence.

3 Your physiotherapist will teach you how to do the exercises shown on the next page. These should be done about six times a day - after feeds or nappy changing. The rest of the time your baby's arm should be placed in the supported position.

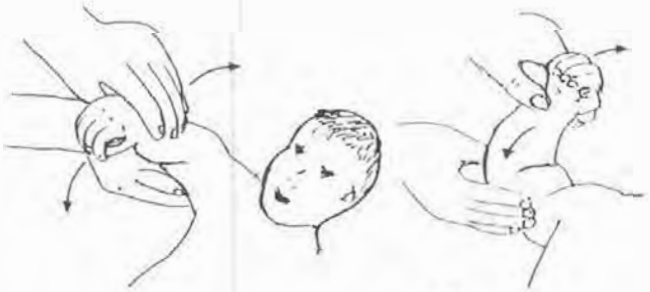
4 At first your physiotherapist will see your baby weekly, but as recovery starts this will become less frequent. However, you may need to continue to attend treatment for up to a year (and sometimes longer) simply because progress can be so slow.

5 You will notice that your physiotherapist will also observe the general physical development of your baby over the period of time that you are attending treatment, and advise if necessary.

The diagrams on the following page give you an idea of how to move your baby's arm into the positions which may recover most slowly. Do not START these movements until the first two weeks are over, and then only under the supervision of the physiotherapist.

HOME PROGRAMME FOR ERB'S PALSY

1. Lie baby on back.
   Place one hand round the shoulder (this is to ensure that the scapula remains immobile). Hold baby's forearm with your other hand and take the arm out to the side away from the body.

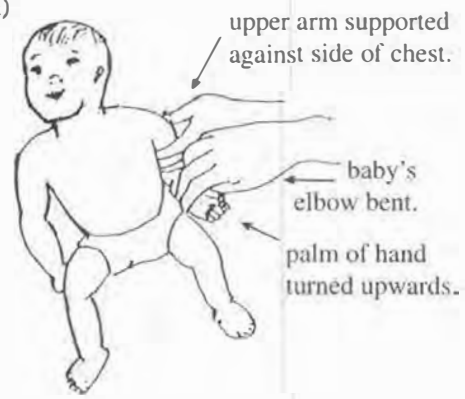


2. Lie baby on back.
   Hold forearm with elbow bent and arm held out to the side. Roll the forearm up then back again.

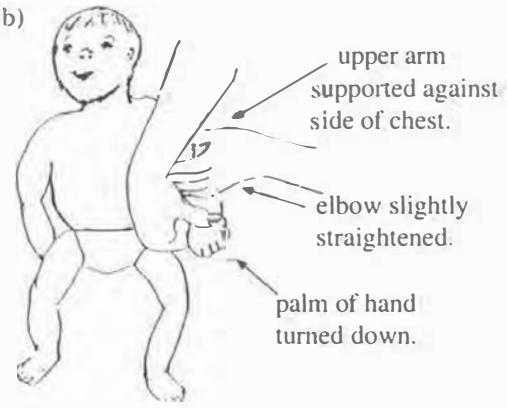
3. Lie baby on back. Place one the hand on the shoulder to stabilize it. Holding the wrist with your other hand, raise the arm up so baby's hand is above the head, keeping the elbow straight.

4. Lie the baby on his back. Gently holding the upper arm against his chest, turn his forearm to bring the palm of the hand upwards (a) and then downwards.

(a)



(b)



FUNCTIONAL ASSESSMENT

This Functional Assessment is used by Lydia Dean and her colleagues at the Royal National Orthopaedic Hospital, Stanmore, Middlesex.

Each child attending Mr. Rolph Birch's Erb's Palsy clinic is taken through the checklist immediately prior to his/her appointment with Mr. Birch.

The checklist is reproduced by courtesy of Lydia Dean, freelance Occupational Therapist, working at the Royal National Orthopaedic Hospital, Stanmore. Her input into this project is gratefully acknowledged here.

ROYAL NATIONAL ORTHOPAEDIC HOSPITAL TRUST
OCCUPATIONAL THERAPY DEPARTMENT, BOLSOVER STREET

PAEDIATRIC FUNCTIONAL ASSESSMENT

Name:	Date of Birth:
Record No:	Date of assessment:
Diagnosis:	Hand Dominance:
Therapy received in the community:	Other relevant History:

RANGE OF MOVEMENT (ACTIVE)

	Right	Left		Right	Left
Shoulder Girdle			**Shoulder**		
Elevation			Flexion		
Protraction			Extension		
Retraction			Abduction		
			Internal Rot.		
Elbow			External Rot.		
Flexion					
Extension					
Wrist			**Forearm:**		
Flexion			Pronation		
Extension			Supination		

OBSTETRICAL BRACHIAL PLEXUS INJURY (ERB'S PALSY)

Name	Hospital No.

GRIP STRENGTH Vigorometer KPa/Bar	Right	Left
SENSORY LOSS		
PAIN		
FINE MOTOR SKILLS Writing, cutting, Lacing, Prehensile tasks etc.		
GROSS MOTOR SKILLS Throwing carrying Kicking		

MOBILITY	
Walk/Run (balance, direction)	
Bicycle	

PERSONAL CARE	
Dressing (Fastenings, laces etc.)	
Feeding (Cutlery R/L)	
Drinking (R/L or both hands)	
Cleaning teeth	
Brushing hair	
Toiletting (Clothes up/down)	

OBSTETRICAL BRACHIAL PLEXUS INJURY (ERB'S PALSY)

Name	Hospital No.

SCHOOL (Gym, Swimming etc)	
Likes/dislikes	

FUNCTIONAL LIMITATIONS
RECOMMENDATIONS
CONCLUSION

THERAPIST:

SIGNED:

DATE:

ERB'S PALSY – A PARENT'S PERSPECTIVE

DEBBIE CLARK
Parent
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Boxmoor
Hemel Hempstead
Herts HP1 1TE

In April 1991 my son was born, his right arm was completely paralysed, he had torticollis and Horner's syndrome. We were informed that this was a kind of numbness similar to when one has been lying on a limb. I read on his notes that he had Erb's Palsy. Unfortunately like most parents we only saw the word "palsy".

All the joy and happiness of having a baby was suddenly clouded, instead of thinking about caring for a new member of the family all we could think of, was his arm. With the absence of information we felt isolated, bewildered and totally confused. What could we do, how did it happen, when would he recover, if ever, what were the implications.

I started moving Daniel's arm when he was 1 week old, the community physiotherapist, Angela, came to see us when Daniel was 2 weeks old and she taught us the full range of movement. At last we could start some kind of treatment, it also made us feel better as we were now doing something positive to help our child.

With the encouragement of other parents we asked to be referred to a specialist in Erb's Palsy and peripheral nerve injuries, Mr. R. Birch at the Royal National Orthopaedic Hospital Trust in Stanmore.

Daniel saw Mr. Birch when he was about 8 months old, he was sent for an EMG. These looked promising and looked as if his nerves were intact. Mr. Birch explained what Erb's Palsy was, how it happened and what the general long term prognosis was. The relief we felt was immeasurable, at last we were talking to someone who could give us all the answers we were seeking. Mr. Birch discussed what he thought was the best course of action, this was the exploration of the Plexus. This was to decide whether the site needed cleaning or that it might need a nerve graft. As Daniel had little to no movement in his entire arm we were happy for Mr. Birch to go ahead, Daniel had nothing, therefore there was nothing to lose.

Daniel went into Hospital when he was 9 months old. Upon opening the plexus it was found that C5 & C6 were severed at trunk level, C8 was avulsed, C7 and T1 were very stretched and fibrous. Mr. Birch found that C5 & C6 had started to regenerate slightly so decided that he would just clean the area.

2 weeks later we were called back to see Mr. Birch, he wanted to know if there had been any dramatic change in Daniel, unfortunately there was not. The next course of action was to graft C5/C6. This was carried out when he was 11 months old. Donor sensory nerves were taken from his leg and affected arm and were used to bridge the site of the tear.

6 weeks later the plaster came off and extensive physiotherapy started.

We were told that as nerves grow at a slow rate, any signs that the graft had taken would not be evident for at least 9 months. Being a person who likes things done yesterday, I woke every morning thinking this was the day his shoulder would move! It was a long 9 months! I think that without the help and encouragement of Daniel's physiotherapist I would have despaired. She has continued to be the one bright light in our lives who not only looked after Daniel but calmed and reassured me.

When Daniel was just over 3 years old he had a subscapularis resection, again he was in plaster for just over 6 weeks. Once again physiotherapy needed to be stepped up, to maximise the operation. This we did with Daniel crying at every session and pleading us to stop. We also noticed a distinct loss of function. I asked to see Mr. Birch as I was not happy, on examination they thought he might have dislocated his shoulder. They explained, that as Daniel is a Group IV there is muscle imbalance and this sometimes happens. He went back in hospital, his shoulder was relocated and encased in plaster for a further 7 weeks.

When the plaster came off, the improvement was dramatic, he could lift his arm to shoulder level, he could bring his arm out to his side, he could bend his elbow slightly and for the first time slept with his arms up and palms facing upward. His balance had greatly improved, now he fell over every 10 minutes instead of every other. He could run better and did not swing his legs out as much as before, this also gave him the encouragement to try other things like jumping and hopping (trying at least), 8 - 10 months later he started developing a scissor movement in his hand and could hold things between his first and second finger. 12 months later he started developing a pincer movement which is continuing to improve and strengthen.

At 4 Daniel went to main stream school, this was another area which opened a whole new set of problems. He had to conform to a set of rules and tasks, not all within his capabilities. PE, writing, drawing, going to the toilet are areas of difficulties. With the help of Daniel's Occupational Therapist, the teacher and myself we have ironed out most of his problems.

Physiotherapy as well as interactive play has played a large part in Daniel's life, we have never let him forget that he has 2 arms, a right and left, and the use of which must be maximised at all times. We have never called his arm as "poorly", "special", it is what it is, a "right" arm.

At 5 years old Daniel is a happy well adjusted child, we try and give him a wide and varied life and try and emphasise the positive aspects of his abilities. Both his father and myself have long come to accept that what he has is what he has got for life. He makes us proud repeatedly, from the time he took the courage to take his first steps to swimming 4 metres without the use of any aids.

ERB'S PALSY GROUP

Erb's Palsy/Brachial Plexus Paralysis

is a condition which, due to birth trauma, can affect one or all five nerves that supply the movement and feeling to either arm. The paralysis can be partial or complete and depends on the damage that the nerve(s) have received.

We, as a group of parents, have set up a help/support group.
The aims of the group are to:

* **Give support to parents**
* **Put parents in contact with each other**
* **Produce a quarterly Newsletter**
* **Assist in obtaining medical information**
* **Advise on benefits and aids for the children**

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Registered Charity No. 1036423

DUCHENNE MUSCULAR DYSTROPHY

Dr BARBARA A. ROBERTSHAW, MB, BCh, BAO, DPM, MRCPsych.
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Craig, who has Down's syndrome, was referred to the Learning Disability Service in early 1990. He was just over 3 years old and functioning at the 9 - 12 month level. He was not presenting any particular problems apart from his hearing, over which there was some doubt, and he had been referred to the Audiologist.

His parents were 33 years old when Craig was born. Both were in good health. There was no family history of Down's syndrome or Alzheimer's disease. Craig is the elder in a sibship of two boys, his brother being 2 years younger.The pregnancy was normal, and Craig was born three weeks early. The waters broke but this was not followed by contractions and labour was induced. Birth weight was 6lbs 2ozs. Craig was diagnosed as having Down's syndrome at birth and his parents were told within half an hour. He was a slow feeder and required night feeds for about 6 months. He suffered from frequent colds and was hospitalised with pneumonia in December 1989. His milestones of development were delayed. He sat at 12 months, bottom shuffled at 20 months, stood at 3 years with help and used a flexi-stand in nursery school. He would finger feed when in the mood and drink from a cup unaided. He sat on a potty and performed at times. He was having input from Physiotherapy and Speech Therapy Departments. He was a pleasant little boy, who enjoyed music. His mother stated that his attention span was approximately 15 minutes when playing with something he enjoyed. His thyroid function tests were normal and he had no radiological evidence of Atlanto-axial instability.

By summer 1991, when 4½ years old, Craig was making progress in walking and at times required very little aid in this. He was on a dressing programme and would co-operate by pulling a jumper over his head and pushing his arms through the sleeves. His co-operation appeared to depend very much on his mood and because of this his performance varied greatly from week to week. He was finger feeding but was still reluctant to hold a spoon. Six months later he was attempting to ride a tricycle and would move along propelling this with his feet. He was gesturing his needs and becoming more insistent in these. He was attending special school four and a half days a week, spending Friday afternoons in his local nursery school.

By August 1992 Craig had ceased to make any further progress and a year later there was a noticeable deterioration in his physical skills, eg he could no longer go from lying to sitting, unaided. He had not been well physically for the previous 6 months having had a prolonged cold and possibly asthma. In view of his lack of progress I decided to again check

his thyroid function but his TSH was within the normal range. Following a holiday abroad in summer 1994 Craig contracted salmonella poisoning and was quite ill with severe diarrhoea and vomiting. Those of us involved with Craig attributed his lack of progress over the year to his physical illnesses and lack of motivation. He continued to receive physiotherapy. His mother was insistent that there was an actual deterioration in his motor abilities over a period of 2 years and that during the previous 6 months he had lost power and tone of his muscles, especially in the lower limbs and that his posture and balance had deteriorated. He could no longer go from sitting to standing holding on, or from lying to sitting unaided. He bottom shuffled less and was reluctant to sit on the floor to play or to sit on his potty, which he had previously enjoyed. He was reluctant to drink from a cup unaided. Various reasons for this were suggested, frequent therapy staff changes within his school, his physical illnesses, his parents blamed themselves for not pushing him sufficiently. Craig was referred to the Child Development Centre where extensive investigations were carried out and Duchenne Muscular Dystrophy was diagnosed. His mother and younger brother were tested and have normal enzymes. According to the Paediatric Neurologist, who runs a regional service for Duchenne Muscular Dystrophy, this is the only boy with Down's syndrome and Muscular Dystrophy to his knowledge. It is estimated that 1 in 3,000 male Down's syndrome children would be expected to have Muscular Dystrophy.

As children with Down's syndrome progress by peaks and plateaux, are hypotonic, can have communication problems and can be unmotivated, it is easy to attribute their lack of progress to these factors. In writing this, I hope to draw the attention of therapists who are involved with these children to be aware of this possible, though rare, diagnosis. Earlier diagnosis in Craig would have reduced the time during which his parents agonised over his deterioration and hastened the provision of the appropriate aids and adaptations to their home.

The current protocol at Hammersmith Hospital for the post-operative management of percutaneous TA release and subsequent rehabilitation of walking in KAFO's in boys with Duchenne Muscular Dystrophy.

MARION MAIN, MA, MCSP
Head Paediatric Physiotherapist
Hammersmith Hospital

Until about two years ago, boys having percutaneous TA release were put in plaster in theatre for 10 days following surgery, before being fitted with KAFO's. Walking in the plasters from day one was slow and often painful, (for everyone!) and the whole rehabilitation process took three, or more usually four weeks.

Following discussion with Professor Dubowitz and agreement from our orthotist, John Florence, the boys are now pre-cast for their KAFO's and night splints so that they are ready before surgery.

The boys take their night splints to theatre, where they are put on after surgery over a skin plaster and padding.

On the first post-operative morning, the children have painkillers before coming to physiotherapy, wearing their night splints and bringing their KAFO's with them. The AFO's and padding are removed and gentle active-assisted dorsiflexion started. Passive stretches to hips, knees, ITB's and the upper limbs are done and the boys lie prone for 10-20 minutes. An active exercise programme is started including head and trunk extension, hip hitching, resisted hip abduction and modified PNF.

The boys are then stood in their KAFO's for as long as they can tolerate, usually three or four times, but will only walk on this occasion if they are willing.

They return in the afternoon, again having had painkillers if necessary, and this time they are encouraged to take a few steps with assistance.

Walking training may be started in parallel bars or holding onto one bar but is usually done with the physiotherapist sitting on a wheeled stool in front on the child, supporting them behind the top of the thighs to give assistance with stepping.

This progresses to walking with two hand support and on to independent ambulation. In extreme cases where the boys are finding difficulty with walking due to lack of confidence, a "Kaye" walker or similar posture control walker may be used temporarily.

The twice daily programme of passive stretches, active exercises and walking training continue until the boys are independently ambulant, which in virtually all cases, is by the end of the second week.

The whole process is quicker and less painful than previously. A follow-up appointment is made for six weeks after discharge to ensure continued progress and check the KAFO's, although parents and physiotherapists are welcome to ring at any time if difficulties arise. The child is then followed up six monthly in the muscular dystrophy clinic, as they were prior to surgery.

For further information or details of visiting the unit, please contact Marion Main at the physiotherapy department, Hammersmith Hospital, London W12 0HS. Tel: 0181 740 3072.

FIRST IMPRESSIONS OF PHYSIOTHERAPY IN PERU

MARION GRANT, MCSP
a/c CERSI APTO 54
Elias Aguirre 1000
Chimbote
Ancash, Peru

MAY 1996.

I came to Chimbote, Peru in November 1995 on a two year job contract, and have been working in my present job for 4 months after two months learning Latin American Spanish in Lima, the capital. I am working as a physiotherapist in a charity rehabilitation and education centre for children with physical and mental disabilities, which is funded by German and Swedish money. It is called CERSI (Centro de Educacion y Rehabilitacion Sicomotriz Infantil) and was started nearly 10 years ago by Margerita, a Peruvian physiotherapist, and has gradually grown and developed, and now includes some adults who need rehabilitation after accidents and illness.

The health system in Peru is fragmented, and there are basically three levels:-

a) IPSS (Instituto Peruano de Seguridad Social) is a social security system, for those workers in secure jobs, who can afford to pay a monthly fee for health care for themselves and their families. This caters for about 20% of the population, mostly middle class. It is roughly equivalent to our National Health Service. It is busy, often with a waiting list (currently it is 4 weeks in the physiotherapy dept), and there is no continuity of care. At present there are talks of privatization, as it is subsidised by the government.

b) Private system. There are no general practitioners, so people have to self diagnose, and then go to the specialist that they think is appropriate. Fees are high (though not as high as in Britain) and all medicines have to be paid for, at market prices. Many doctors advertise themselves as specialists, but this doesn't mean that they necessarily have any relevant qualifications. As an example a doctor may advertise himself as being a paediatrician, but have no extra knowledge or qualifications in this area.

c) Government hospitals and clinics. In Chimbote, population 250,000 there is a district general hospital, which is very small, and a regional hospital, built and equipped with German funds. Patients have to pay for treatment, but fees are a lot less than in the private sector. Consultants' clinics are limited to the first 20 people who turn up on a particular day, so people line up from 5am onwards, for a 'ticket'. Medicines have to be bought at the market price eg. £200 for a 3 day course of antibiotics, which is totally out of reach of most of the population.

In addition there are charity hospitals and clinics, mostly run by American and Irish nuns. Cost of treatment is on a sliding scale, running from nothing for the poor, to the real cost for those who can afford it. The local maternity hospital is a charity hospital and is very well run and equipped, catering for about 3,500 births a year, which is over half of all births in Chimbote.

There are other social security schemes for specific workers. Chimbote has a very important fishing and fish processing industry, and these workers have their own hospital and clinics. The police, military, navy and airforce also have their own schemes with hospitals in Lima, the capital.

In my limited experience, I would say the level of knowledge and competence of the doctors is low. Up to date information is hard to get in Spanish, books are very expensive, and the level of education is low, with great emphasis on learning by rote. Little emphasis is given to proven treatments and the 'old boy network' flourishes. It matters much more where you went to University, and little emphasis is put on continuing education.

As far as physiotherapy is concerned it is a relatively new profession, 28 years old, and there are not many people practising. There are two levels, Technologos Medicos en Medicina Fisica and Fisiotherapistas. The former study at one of the two Universities in Lima for 5 years, the latter at a college in Trujillo for 3 years. It appears to be a bit like a degree compared to a diploma. The course in Trujillo has been closed down, and another course started up in Chimbote to train Technologos Medicos. Most of the physiotherapists who work in Chimbote and the provinces were not trained in Lima, and so there is some tension between the two levels. Apparently the "Fisiotherapistas" have been invited to do another two years of part time training, to bring them up to the National standard, but this is impossible for most of them. There is no separate professional group, but they are lumped together with the radiographers and laboratory technicians - Equipo para medicos de ayudar al tratamiento y diagnostico. There is no professional magazine and very little opportunity to learn anything extra. I did go to an 'International Conference' (the only foreigner was an Argentinian) in Lima, which was generally of a poor standard in content and organization.

There are Doctors of Physical Medicine who are heads of the Physiotherapy departments, and they "evaluate" all patients and prescribe exactly which treatment they are to receive. The evaluation is often done with the patient's clothes on. This means that there is little autonomy,

and if a patient is referred inappropriately, they cannot question the treatment.

However, CERSI with whom I work, is different. It is a service specifically for the poor of Chimbote. If they can afford it, families with disabled children, or children with learning difficulties pay 30p each time they come. If they can't afford it, they come free. The adults pay 60p if they can. There are 3 Fisiotherapistas and two auxiliaries providing treatment for gross and fine motor problems. There is also a teacher, speech therapist and psychologist. At the moment we have about 85 clients a day attending, and the number is growing as word spreads that there is an English 'especialista' who can do evaluations! We have a doctor coming every other week for a clinic, but in between the physiotherapists are learning to do evaluations, with my help.

The majority of problems are neurological, many caused by infections (Chimbote has a very polluted environment), accidents, malnutrition (50% of the children are undernourished), and contraindicated drugs taken in pregnancy. I work closely with the director, Margarita the physiotherapist who started CERSI, to develop the service and train the workers. I have begun to give internal workshops and hope, as my Spanish improves, to give some public workshops for physiotherapists. I have also been asked to give some internal workshops for midwives at the Maternity Hospital as I worked in Obstetrics and Gynaecology, and for the NCT in Britain.

There are no specialist physiotherapists, everyone is a generalist, so I was recruited especially for my paediatric experience. I have designed some equipment, including special seating, which has been made by a local carpenter with funds donated by the charity that recruited me, International Cooperation for Development. The last workshop I ran was on posture and seating!

My six months here have shown the urgent need for both technical transfer and external funding at the moment, as Peru is going through a difficult economic time. Unemployment and underemployment affect the majority of the population and so people find it difficult to buy enough food to live on. This leads to malnutrition and spread of disease and disability. More funds may arrest this and enable charities to move a step forward into long term health education and improvement.

LYCRA SPLINTING FOR CEREBRAL PALSY

REPORT FOLLOWING SECOND SKIN TRAINING DAY ON 6.6.96

LYN HEMMINGS
Senior Physiotherpist

A company called Second Skin of Western Australia have been manufacturing lycra splinting for the past 5 years to help manage postural and functional problems in children and adults, mainly those with cerebral palsy or those who have had head injuries. The lycra splints are available in several forms - a full body splint, arm or leg splints, hand splints or AFO's. Each splint is individually made and designed, consisting of lycra with plastic boning for extra support where needed. The splints are dynamic and provide support whilst allowing movement.

Research has been carried out on the use and effectiveness of the 'Upsuit' or full body splint. This splint extends from the wrists up to the shoulders, down the trunk, over the pelvis and ends just above the knees. There is full access for toileting needs. The design of each suit is dependant upon the client's physical abilities and the suit is targeted at improving certain functional objectives. The aim is that the suit improves proximal postural stability, reduces involuntary movement and improves dynamic function. Therefore the client then should have improved confidence to attempt motor tasks.

Research carried out on a limited number of children (32) found that positive effects were reported in the majority of users and for 14 out of 24 of the children these benefits lasted for 1/2 - 36 hours after removal of the suit. 25% of clients benefited greatly from using the suit. Those children who appeared not to benefit as much as others were those who had not yet achieved an upright posture. The suit impaired their ability to move on the floor, however benefits were sometimes seen in increased ability once the suit was removed.

Functional improvement depends on the type and severity of the disability and the subject's personality. More careful selection of suitable clients may increase the success rate. Those not suitable include clients with unstable epilepsy, poor circulation, poor respiratory function or poor compliance. The suit needs to be worn for 6 hours or more each day but must be taken off for sleep. Use should gradually be increased from a start of 1 hour twice a day over a period of 2 weeks.

Splints should last for approximately 10-12 months and can be adjusted for change in ability or growth. The cost is approximately 600 rising to 1000 if hands and feet are included. This cost includes 1 alteration and 4 reviews by Second Skin per year.

For some clients arm/hand splints may be more suitable. Such splints can provide dynamic positioning in flexion/pronation or extension/

supination and/or assist with wrist extension, thumb opposition, etc. Again each splint is designed individually. The client's functional needs are paramount.

Initial enquiries about the nature of these splints made me feel that they would be of most benefit to clients with athetoid movements lacking proximal stability. However it would appear from case histories that were discussed that clients with spasticity can also benefit. There has also been some success in the use of this type of splints for clients with dystonia or problems with coordination. I look forward to following the further development of this type of splinting and I am sure its use can be beneficial with suitable clients. Obviously further research will need to be carried out on a larger number of clients over a longer period. Such research should perhaps use standardised assessment tests as part of its monitoring process.

Further Information (Editor)

Second Skin will be returning to the UK at the end of August 1996. As of yet no venues have been secured but the dates are as follows:-

29th, 30th August - Clinics in the Southern region of England
31st August - Second Skin will present a scientific paper at the NAPOT Edinburgh Conference.
2nd, 3rd, 4th September - Clinics in the Southern region of England
5th, 6th, 9th, 10th, 11th September - Clinics in the Northern region of England.

For further information contact Richard Parnell or Sara Tarrant, Scope Research Department, 16 Fitzroy Square, London WP1 6LP. Tel: 0171 387 9571

Reference

Blair E., Ballantyne J., Horsman S., Chauvel P. (1995). 'A Study of a Dynamic Proximal Stability Splint in the Management of Children with Cerebral Palsy'. *Developmental Medicine and Child Neurology*, **37**, 544-554.

MANAGING EQUINUS IN CHILDREN WITH CEREBRAL PALSY: ELECTRICAL STIMULATION TO STRENGTHEN THE TRICEPS SURAE MUSCLE

Judy Carmick - Developmental Medicine & Child Neurology 1995, 37, 965 - 975

The author is a Paediatric Physical Therapist based in California, the precise nature of the clinic in which she is practises is unknown. In 1993 she had a paper published in Physical Therapy in which she used neuromuscular electrical stimulation (NMES) in three Cerebral Palsy patients.

There is an extensive literature review which at times is confusing and/or ambiguous with subjective statements from the author which would have been more appropriate in the final discussion. The general point coming across is that spasticity is responsible for the lack of appropriate movement and that there is a long term view that exercising spastic muscle would increase spasticity. The problems of traditional Tendo Achilles lengthening with resulting weakening and decrease in gait efficiency are highlighted. EMG studies have shown that amplitudes in the Triceps Surae are weaker than in Tibialis Anterior. The author's previous paper is discussed in which NMES was applied to Triceps Surae in three Cerebral Palsy children to increase strength, co-ordination and range of movement.

The paper consisted of four case studies. The Methodology section intending to describe how the treatment was planned and carried out is poorly described and from the information would be impossible to replicate the study. Four children were treated with NMES and the therapists hand held switch was used to control the correct timing of muscle contraction during a task specific activity, in this case gait. It is not explained as to how these children were selected e.g. age or random selection. There is very little information about the children apart from diagnosis; two spastic diplegics, one quadriplegic and one ataxic child. There is a lack of orthopaedic information such as range of movement in hips, knees, ankles, scoliosis present or not, leg length discrepancy. Although spasticity is mentioned, it is not described in the context of spastic patterns of movement or changes in tone on movement. Spasticity is not measured in an objective or even subjective way.

The treatment took place over a period of time, differing between children. The author maintains there was an improvement in gait, heels were down, the valgus position of the foot improved. There is a lack of objective data to support these claims. The author does not mention any learning disabilities which would reduce the effects of therapy or take longer to achieve results. Other therapy ongoing during the period the children were receiving NMES is not described nor details of home programmes or parental motivation.

In view of the fact that the author may have some real issues to highlight, the short discussion is disappointing. The article is thought provoking and is a good basis for discussion among therapists. Instead of advocating the policy of "strengthen, but do not lengthen the Triceps Surae muscle" on the basis of her limited observations, the need for further research in this controversial field should be emphasised. Most therapists will be disappointed that another therapist does not stress the importance of assessing individual children and the unlikelihood of one treatment being suitable for all children with complex neurological and orthopaedic problems.

BEVERLY KING
Paediatric Physio
Ridgeway School
North Downs Community Trust

PHYSICAL THERAPY FOR CHILDREN

Editor:Suzann K. Campbell PT, PhD, FAPTA.
Associate Editors: Robert J. Palisano PT,ScD and Darl W. Vander Linden PT, Phd.
Publishers: W. B. Saunders Company. Place of Publication: Philadelphia, PA, USA.
Year of Publication: 1994. ISBN: 0-7216-6503-9. Price: Not Given. Number of Pages: 912

This book, as the title indicates, was written in the USA. Thus there are many linguistic differences eg the use of physical therapist rather than physiotherapist. For the most part this doesn't interfere with the excellent content and lay out of the book. The one exception that I felt jarred was the use of the term 'Mental Retardation', where we would use 'Learning Difficulties'.

The aim of the editors was to put together a comprehensive reference book for paediatric physiotherapists, something they have largely succeeded in doing. The book is divided into five sections.

Understanding Motor Performance in Children - covering normal motor development, motor skill acquisition, gait analysis and physical fitness in children among other topics.

Management of Musculoskeletal Impairment - which covers topics as diverse as juvenile rheumatoid arthritis, arthrogryposis, orthopaedics, muscular dystrophy and sports injuries.

Management of Neurological Impairment - which covers the obvious areas of cerebral palsy and myelodysplasia (spina bifida) as well as brain tumours, traumatic head injury, and assistive technology. This latter chapter covering areas from seating assessment to power switches and communication aids.

Management of Cardiopulmonary Conditions - including chapters on the ventilator dependent child as well as CF, asthma and thoracic surgery.

Special Settings and Special Considerations - this diverse section covers the Special Care Nursery (or NNU), medicolegal issues in the USA and education.

Throughout, each chapter is prefixed with the relevant anatomy, physiology and theories appropriate to that chapter, including the research done in that area. Each chapter is well referenced with a full index of references at the end. This makes the book a very useful tool to students or therapists wishing to start in paediatrics, more experienced practitioners wishing to update themselves in areas they are less familiar with and to therapists wishing to check research already carried out prior to their own research.

There are some drawbacks with the book being an American publication - all the references to legal requirements are naturally American and not those of the UK such as the Children's Act and the Education Act. Also the social system in America is very different from ours and that is reflected by the lack of reference to Social Services, benefits etc. One further disadvantage is that work quoted is standardised on American children eg on physical fitness in adolescents. Although this doesn't invalidate the information, it may need to be used with caution if trying to apply it to UK children. Some of the test batteries used will be familiar to UK therapists such as the TOMI (now called the ABC), Bayley etc whereas others, such as AAHPERD Youth Fitness Test are unlikely to be.

These points shouldn't put therapists off this book as its well laid out and logical format makes it easy to dip into for reference, or to read whole chapters. It would certainly be a useful addition to any departmental library.

DEVALA DOOKUN
MCSP, GradDipPhys

OBITUARY

The death is sadly announced of Doreen Wilson (née Ham). Doreen trained at The Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry in the days when Orthopaedic Nursing preceded the physiotherapy training. She qualified in 1957.

Doreen worked at Oswestry for a short time after qualifying and then moved to Birmingham to work as physiotherapist at Cadburys.

After her children were born, she started working with children, firstly in community clinics, then at Carlson House School in Birmingham.

Ten happy years were spent at Victoria School and the final years of her career were spent as a member of the team at The Child and Family Centre, Northfield, Birmingham. She retired in September 1995.

Doreen is remembered by her colleagues as a dedicated team member with an ability to relax the most anxious parents. She is remembered by the families of the children she treated with love and affection. She was a talented physiotherapist with a fantastic insight into the treatment of the whole child and family. She is greatly missed by family, colleagues and patients.

PROFILE OF MEMBERSHIP SECRETARY

ELIZABETH HARTY, MCSP

Elizabeth was born and educated in Dublin and qualified from the Dublin School of Physiotherapy in 1969. Her basic training was done in the Richmond Hospital before specialising in Obs and Gynae. in the Coombe and the Rotunda.

Elizabeth and her husband moved to County Meath to start a stud farm and racing stables, and bring up their three sons in the freedom of the countryside. During these hectic years she worked part time with chest and cardiac patients in Peamount Hospital and latterly in Paeds. at St. Raphael's Co. Kildare.

In 1988 the family began a new phase of their lives when Elizabeth's husband developed motor neurone disease and they moved to a family farm in Armagh in Northern Ireland. She joined the Paediatric Services in the Armagh/Dungannon Unit and CDC at Craigavon area hospital and was fortunate to go on the first Bobath course to be held in the Province. She is currently based in South Tyrone Hospital, Dungannon and attached to Speerinview Special School. The prospect of the school moving to a splendid new site in September and exchanging a shared broom cupboard for a spacious therapy room is very exciting.

The local APCP was a welcome source of new contacts and shared information and the rise through the ranks of "tea lady", Reg. Rep. and Mem. Sec. has been enjoyable, especially as it has offered a unique opportunity to liaise with paediatric physios world wide. Closer to home Elizabeth hopes to encourage a greater APCP membership and develop closer links with members in Southern Ireland.

Elizabeth and her family share a great love of the countryside and she is an avid gardener, dog and cat walker, house restorer, and entertainer of her growing family and friends.

PRIVATE PRACTITIONER'S REGISTER

Do you treat children privately, or do you wish to do so?

APCP maintains an annually updated register of private practitioners working with children which it distributes to parents on request.

Please complete the form below if you wish to join or remain on the register for 1996-7.

Private Practitioner's Register

Name ..... CSP no: ..... APCP no: .....

Contact Address .....

..... Tel no: .....

Qualifications: .....

Clinical speciality/interest: .....

Do you work full time or substantially in private practice? Yes/No

Are you able to treat patients (Please tick)

Daytime ☐ In their own homes ☐

Evenings ☐ In a private clinic ☐

Weekends ☐

Are you a member of OCPPP? Yes/No

Further information from and completed forms to:

Mrs. Liz Hardy, 9 Rook Lane, Norton, Stockton-on-Tees TS20 1SD

APCP SURVEY OF STATEMENTS AND THE CODE OF PRACTICE

CAROL HURRAN, MCSP
APCP Post Registration Education Spokesman

A questionnaire was sent out to APCP members in May to find out how well the Code of Practice for Special Educational Needs is working for physically disabled children and whether there are significant differences in interpretation and provision across the country. Copies of local guidelines and pro-formas for writing statements and annual reviews were also requested, together with personal comments on any problems in meeting the requirements of the Act.

85 questionnaires were returned from England, Scotland, Wales and Northern Ireland. This represents an 8% response from the total membership and consisted almost entirely of physiotherapists working in the community for the NHS in schools and children's centres.
A great deal of useful information was given which is very much appreciated and will help in producing an update of APCP guidelines on the 1993 Education Act and on writing the physiotherapy advice for Statements and Annual Reviews.

RESULTS

1. 95% were aware of the 1993 Education Act and Code of Practice, 4% were not and 1% did not answer.
2. 82% had a copy of the Code available, 16% did not and 2% did not answer.
3. 46% had training on the Code and/or local procedures, 54% had not.
4. 99% have provided the Physiotherapy Advice for Statements of SEN.
5. 74% use a standard form or guidelines for the Physiotherapy Advice.

   27% of these say they use a form based on the APCP suggested format.

   26% use no standard form or guidelines. 14% of respondents sent in their own forms or comments.
6. 76% had their Advice collated by Child Health, SCMO or Community Paediatrician, 12% by Education, and 9% were unsure or said there was no central collation.
7. 53% said the medical advice was completed within 6 weeks, 6% said it was not and 26% said it was sometimes or usually. 15% did not know.
8. 69% discussed the advice with parents/carers. 19% did not and 12% did sometimes.
9. 56% said the draft statement was completed in 6 months, 6% said it was not and 18% said it was sometimes. 20% did not know.

10. 48% see the final Statement, 31% do not and 21% see it sometimes.

11. 68% believe that the LEA take their advice into account, 6% do not, 9% don't know and 17% believe it does sometimes.

12. 15% were aware of appeals to the Tribunal regarding physiotherapy provision. 77% were not aware of any appeals and 8% didn't know or didn't answer.

13. 84% are invited to contribute to Annual Reviews. 9% are sometimes (more often in special than mainstream schools), 1% never and 6% not applicable or didn't answer.

14. 94% of respondents work in the NHS in the Community, 5% also work in Acute Paediatrics and 1% works for a charity in a school.

15. Numbers of paediatric physiotherapists known in each Health Service area varies widely from 2.5 to 10.97 WTE. 29% reported vacancies, some long term including a superintendent and several senior I posts.

16. The proportion of the school age caseload attending mainstream schools varied between none and double those in special schools with large variations of caseloads between therapists eg. 20 to 150 cases. 2 areas have separate services for special schools (community) and mainstream (acute) which can be problematic.

17. This was an open ended question asking for comments about provision for children with SEN who have a physical disability. Some examples of possible problems were suggested on the questionnaires as follows:

    i) suitable place to carry out therapy?

    60% identified this as a problem, particularly in mainstream schools and worst of all in secondary schools unless 'designated' for PD pupils when facilities are much better. Corridors and small medical rooms often have to be used with poor privacy.

    Provision is summed up as 'varies terrifically depending on head teacher and attitude. Some schools can't do enough to cater for these children, others make life very difficult for children, families and therapists.'

    ii) time allowed for therapy - by therapist or educational assistant?

    Most primary schools are very co-operative but secondary schools less so. Inadequate physiotherapy staffing to allow visits at suitable frequency is often a problem, plus travel time to see an increasing number of children in mainstream schools. Education and Health Authorities are perceived as not planning jointly to resource these children properly. Some LEAs have reduced the hours of educational support for pupils due to budget cuts and this has

sometimes led to pupils going back into special education. Two respondents do not see children in school because of the poor facilities; after school clinics on a group or individual basis are the main input. Educational support staff are frequently praised for the excellent work they do in continuing the physical programmes advised by the therapist. Most physiotherapists in mainstream schools work through the education staff, monitoring and updating programmes and advice at each visit. Therapy programmes are often done during PE lessons or non academic time and one reports that the programme is timetabled into the child's Individual Educational Plan and is functional.

iii) adult help to carry out programme/training issues?

The majority of educational support staff carry out suggested programmes particularly if this is clearly stated as a need in the child's Statement. Help can be variable depending on the school and the demands of the National Curriculum and difficulties increase with the age of the child. Training is usually given on an individual basis by the visiting physiotherapist. Some physiotherapists encourage staff to attend their treatment sessions to gain expertise, others organise group training sessions for support staff. Some train staff for a day at the special school before integration begins. A few children get no help with programmes at school and parents may do it at home. Manual handling issues are often a problem, with variable training opportunities for staff. LEAs sometimes provide centralised training but rarely involve physiotherapists.

iv) adult help for physical needs?

This is usually adequate if the child has a designated assistant. However, one LEA has a new rule to provide adult help for up to 50% of the school day, and some LEAs have changed the child's 'banding' without notice to reduce costs.

v) provision of equipment by LEA for use in school?

This varies widely depending on local policies and can be a slow and difficult process. Most LEAs recognise equipment needed for school as an educational responsibility but there is variation in whether it is centrally funded or paid for from the school's own budget. One LEA no longer provides special equipment and much time is lost in applying to charities to fund this. Another LEA supplies all computer needs but standing frames and special seating are provided by Health. Other areas battle out each case between Health, Education and Social Services. In one area 'all equipment is provided by Health with a good budget and this works really

well'. Some areas keep an educational pool of equipment which can be accessed by therapists.

vi) problems getting adaptations/access for child?

This was usually described as "very slow" especially in mainstream schools. Some areas resolve the access problem by sending the child to a school where adaptations are already done. One area involves Occupational Therapists who have a central fund.

vii)any other issues?

There were many interesting replies to this question. There is a perception that some LEAs are not statementing or recording children's special educational needs to save money or alternatively recommending special school placement to avoid costs of adaptations in mainstream. Provision varies greatly and 'much depends on parents' assertiveness and how articulate and demanding they might be'

Physiotherapy staffing is a major issue with some impossible caseloads being quoted. The 1993 Act has vastly increased time spent on report writing and the need for increased secretarial support. One Superintendent was able to persuade her Health Authority to provide additional funds for this when she complained that physiotherapists would not have time to complete statements in the statutory 6 weeks.

Some physiotherapy managers have seconded staff at short notice to cover GP and other contract work, to the detriment of the service to schools. In some areas staff morale is very low as they cannot meet the demands of the caseload. They write statements of need which they cannot implement. The wording of the Physiotherapy Advice is crucial and problems have arisen when Statements are inherited from elsewhere with a different approach to physiotherapy management, or when specific inputs are recommended which cannot be fulfilled.

In spite of all these problems in some areas of the country the Code of Practice appears to be well interpreted and adequate resources can be provided. The variation in provision in Education, Health and general attitudes to physically disabled pupils is inequitable and often inexplicable.

Thanks to everyone who sent back the questionnaire, and for all the additional information and forms received. Any further comments or information will be most welcome.

LIST OF PUBLICATIONS

BOOK/TITLE	QUANTITY PRICE LIST
SERIAL SPLINTING IN HEMIPLEGIC "CEREBRAL PALSY" *by Margaret Jones (2nd Edition)*	£3.50
THE CHILDREN ACT 1989 *'A Synopsis for Paediatric Physiotherapists'*	£2.50
PAEDIATRIC PHYSIOTHERAPY *Guidelines for Good Practice*	£2.50
DYSPRAXIA - A HANDBOOK FOR THERAPISTS *by Michele Lee and Jenny French*	£5.50
GUIDELINES FOR CALCULATING PAEDIATRIC PHYSIOTHERAPY CASELOADS - FACTSHEET	£1.00
BABY MASSAGE - AN INTRODUCTION FOR PARENTS - FACTSHEET	£1.00
STANDARDS OF PRACTICE - PAEDIATRIC PHYSIOTHERAPY	£2.50

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	2-5 copies	£1.00
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Physiotherapy Department, Ladywood Middleway, Ladywood, Birmingham, B16 8ET

Please supply Name and Address for delivery

SOUTH WEST

Gill Smith
Children's Unit
Salisbury District Hospital
Salisbury SP2 8BJ
Tel: 01722 3362622
Ext 2280

Firstly I would like to thank Sue Moll for all her hard work on our committee. We are sad to say 'Goodbye'.

I would also like to welcome Julie Graham who will be taking over as Regional Rep in October.

We are organising two study days:

October 1996 - Attention Deficit Syndrome in Salisbury, for further information please contact me.

March 1997 - AGM and Study Day on 'Legal Issues'. More information will be available at the end of the year.

Finally I would like to thank the committee for their support over the past couple of years.

NORTH WEST

Sue Leech
Eccles Health Centre,
Corporation Road,
Eccles
M30 0EQ

As this is being written, we are about to hold our "sharing day" at Booth Hall Hospital on the 24 hour Management of the Disabled Child. Attendance is lower than usual (about 18 expected) but we hope to gain from the discussion time and chance to share ideas.

The joint study day with N.A.P.O.T. on working with Dyspratic children is looking promising and the applications are coming in slowly, remember the closing date is 30.8.96 so don't forget - APPLY NOW!

We are purchasing some new videos - including one on development in the visually impaired child - contact Gill Holmes at Alderhey for information.

Also, congratulations to Eileen Kinley on her election to the National Committee.

Membership has crept up slightly since January, but we still need new members, so please tell your colleagues and encourage them to join us. We would welcome any ideas you may have on promoting A.P.C.P. in the North West!

The Committee are already planning for the 1997 course programme, Gross Motor Function Test and Respiratory Management - acute to community, so far. Do let us have your ideas.

Enjoy summer!

NORTHERN IRELAND

No report.

Adare Brady
8 Ballyloughan Avenue
Ballymena
BT43 5HN

SOUTH EAST

No report.

Terry Pountney
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Tel: 01480 - 214718 (home)
Fax: 01480 - 415203 (work)

Welcome to all new and returning members. We now have 143 in East Anglia. I represented you at an E. Anglia CSP Board meeting called to discuss the future of local branches, because of declining interest in branch events. A possible joint event for clinical interest groups, where concurrent seminars/courses could take place, was discussed. The day would include a branch event to bring everyone together. Branches are a direct and local contact with the CSP for all members. Everyone felt that this link should be maintained.

We held a Gross Motor Function Measurement Study Day at Hemel in June and various groups of physios have had local training given by Eva Bower. Eva says she has trained around fifty groups, so we should now have a large number of people using this standardised outcome measure for CP. Once we have all become accustomed to using GMFM, perhaps we could have a short discussion to pool ideas - maybe at our AGM in Cambridge in March 1997. Members could also write to the editor of this journal with comments for publication.

We are hoping to organise a course in October on Neuro Trophic Stimulation in paediatrics and one on Sports Injuries in February 1997. Any more ideas please contact me.

We still have vacancies on our committee and would particularly like committee members from more areas of the region, so please consider joining us.

WEST MIDLANDS

Carol Foster
90 Greenhill Road
Moseley
Birmingham B13 9SU

As the West Midlands Membership is currently down, I have recently circulated lapsed members (some 30 in number) with a reminder. Hopefully this will increase membership which is usually about 120, please encourage your colleagues to join.

There is an interesting series of evening talks in the Autumn, beginning in September with a lecture on Cranial Osteopathy by Tim Mundon at the Child Development Centre, Goodhope Hospital, Sutton Coldfield.

Please refer to the course section for further details. Suggestions for the Spring 1997 - Programme are:

1 Day Bobath Course
1 Day Gait Analysis
1 Day Normal Movement
1 Day Motor Function
1 Day Outcome Measures

Watch this space for further details.

Do you have any ideas, suggestions etc? Please talk to me!

NORTH EAST

Teleri Robinson
22 Leith Court
Thornhill
Dewsbury
WF12 0QP

We have bad news and good news. The bad news is that after two years we have now lost Liz Hardy as our regional representative. The good news is that she has been elected Vice Chairman of the APCP. Congratulations Liz and all our thanks for all the hard work you put in on our behalf. I'm sure you will do the same for the National Committee.

I have now taken over as Regional Rep. and look forward to representing you on the National Committee.

We have not run any courses since the last issue of the journal as we have all been very busy organising the National Conference for 1997. We have now more or less got a programme together and a venue which will be at Breton Hall, a training college set in beautiful parkland situated near Wakefield. The dates are the 3rd, 4th and 5th of April 1997. So get organised make a note today in your forward planners.

LONDON

Diane Coggings
7 Union Street
Barnet
Herts EN5 4HY

Thank you to all who applied for our study day on 10th June 1996 with Eva Bower. I am sorry that some members were unsuccessful in getting on the course, but we were full well before the closing date.

Our next event will be a half day on Saturday, 5th October 1996 in London, on Alternative Therapies. This will include a talk on "Hyperbaric Oxygen

Therapy", to include the implications that the therapy has on Physiotherapy. We have found that we get more response from sending out "fliers" then we do to advertising in Frontline. However, if your place of work has not received one, or you would like a flier sent to your home address, please do not hesitate to contact me.

I would like to thank all those members who have either renewed their membership or joined as new members as the London Branch now has 150 members. In view of the good response recently to our study days and evenings, the London Branch have a very healthy bank account. We have decided to try and thank the members and are offering five bursaries of £200.00 each for continued education/research in the name of Jenny Marks, who was a member of this committee and unfortunately was killed in a car accident. For further details, please contact me at my home address. We look forward to hearing from you.

WALES

Donna Morris
Physiotherapy Department
Prince Charles Hospital
Merthry Tydfil
Mid-Glamorgan
CF47 9DT
Tel: 01685 721721 x8111

Thanks to all committee members in Wales for their hard work over the past few months, we have worked hard on the programme for the rest of 1996-1997 and are progressing well with 1997-1998.

We have a series of evening lectures for the autumn and winter of 1996, the topics will hope to include the child with Aspbergers, degenerative paediatric neurological diseases and paediatric swallowing difficulties - keep your eyes peeled.

The D.A.F.O.s course is being held on August the 2nd and 3rd a good turn out is expected.

For 1997 we hope to run a two day course in conjunction with the Children's Arthritis Unit, Birmingham Children's Hospital on Juvenile Chronic Arhritis, a study day on Diplegia and possibly something on Attention Defecit Disorder.

Please keep all your ideas coming.

SCOTLAND

Lesley Smith
Physiotherapy Department
Royal Hospital for Sick Children
Yorkhill NHS Trust
Yorkhill
Glasgow G3 8SJ
Tel: 0141 201 0061

Brilliant response to renewal of membership letter. We are again over 100! Well done.

The autumn and spring study days will be titled: Issues surrounding child protection and Food for thought, an eating and drinking day.

The Royal Hospital for Sick Children, Glasgow which is part of the Yorkhill Trust has gained King's Fund accreditation.

I believe it is the first paediatric site in the country to be accredited.

REGIONAL COURSE AND STUDY DAYS

SCOTLAND

11th - 13th September 1996

at Yorkhill NHS Trust, Glasgow

An Introduction to Paediatrics

A general overview and update on all aspects of acute paediatric care.

Subjects covered will be:

Cystic Fibrosis; Juvenile Arthritis; Child Development and Cerebral Palsy; Acute Respiratory Care and Asthma.

Cost: for 3 days £80 members
£100 non-members

for 1 day £35 members
£42 non-members

Coffee and lunch included

For further information and application form, please contact:

Sue Ferguson or Lesley Smith
Physiotherapy Department
Yorkhill NHS Trust
Dalnair Street
Glasgow G3 8SJ
Tel: 0141 201 0000 Page: 2135 or 2201

APCP NORTH WEST and NAPOT NORTH WEST

Wednesday 2nd October 1996

9.00 am - 4.30 pm

Alder Hey Children's Hospital Education Centre

Pulling the Strings Together

An interdisciplinary study day on working with children with dyspraxia

The morning will consist of lecturers followed by an afternoon of workshops.

Speakers: Marion Hankey (PT) and Janet Taylor (OT) from Tameside Perceptual Motor Service.
Eadaoin Bhreathnach (OT) from Northern Ireland.
Dr Ros Thorburn, Consultant Paediatrician - Warrington.
Debbie Gould, Speech and Language Therapist - Warrington.
Teachers from Alder Hey's I.T.T. Classes and Liverpool's Special Needs Integrated Support Service.
Mr Lewis, a parent from an active parents' support group.

Cost: £40 APCP/NAPOT members
£45 non-members

For further information contact:

Ms Judith Taylor, O.T. Department, Angela Manning Centre, Guardian House, Guardian Street, Warrington, Cheshire WA5 1TP.
Tel. 019925 405736

Closing date: 30/8/96. Workshops allocated on a first come/first served basis.

APCP WEST MIDLANDS BRANCH

Programme of Evening Lectures Autumn Term 1996

September 25th 1996

"CRANIAL OSTEOPATHY"

Speaker: Tim Mundon

Venue: CDC Goodhope Hospital, Rectory Road, Sutton Coldfield.
Tel: 0121 378 22211 (Judy Brock)

Time: 6.30 pm for 7.00pm.
Tea and Coffee will be available.

Price: £2.50 APCP Members
£3.00 Non Members

October 16th 1996

"INTRODUCTION TO HYPERBARIC OXYGEN THERAPY"

Speaker: To be announced

Venue: Newbridge Multiple Sclerosis Therapy Centre, Meadow View Wharf, Tettenhall Road, Wolverhampton WV6 0JP.

Time: 6.30pm for 7.00pm.
Tea and Coffee will be available.

Price: £2.50 APCP Members
£3.00 Non Members

November 27th 1996

"REFLEXTHERAPY"

Speaker: Christine Jones MCSP

Venue: Victoria School, Bell Hill, Northfield, Birmingham.
Tel: 0121 475 6663 (Sally Braithwaite)

Time: 6.30pm for 7.00pm.
Tea and Coffee will be available

Price: £2.50 APCP Members
£3.00 Non Members

OTHER COURSES

CAPABILITY SCOTLAND

Turning Disability into Ability

September 25-26, 1996

Two-day conference to examine new approaches to treatment of cerebral palsy.

Venue: **Maybury Conference Centre, Edinburgh**

Further details from:

Annie Wyllie, Course Organiser, Capability Scotland
External Therapy & Advisory Services, ETAS Centre,
11 Ellersly Road, Edinburgh EH12 6HY
(Tel: 0131 313 5510)

Fee: £120

Closing date for applications: September 6, 1996.

TOUCH AND GROW

Study Day

HANDLING AND POSITIONING OF THE NEWBORN - Mary Harrison, Superintendent Physiotherapist, St James's University Hospital - Regional Child Development Centre

BABY MASSAGE - Cherry Bond, RSCN, RGN ITEC, Neonatal Sister - Queen Charlotte's Hospital, London

PLAY AND STIMULATION - Trudi Roberts, Play Therapist Developmental Paediatrics, St James's University Hospital - Regional Child Development Centre

Morning Session: Lectures. Afternoon Session: Workshops

The Special Care Baby Unit and Child Development Centre, Harrogate Health Care NHS Trust

at: **THE WHITE HART CONFERENCE CENTRE, HARROGATE, SATURDAY 5TH OCTOBER 1996**

– £30 –

HHC
HARROGATE HEALTH CARE

Enquiries and applications:
May Lin Gosling, Sister, Harrogate General Hospital, Special Care Baby Unit, Harrogate HG2 7ND. 0142 388 5959;
Fran Shipman, MCSP, Harrogate General Hospital, Child Development Centre, Harrogate HG2 7ND. 0142 355 3023

DYSPRAXIA WORKSHOP

This is a one day workshop which will cover lectures and practical sessions on assessment and treatment.

Date:
September 20 1996

Venue:
Wokingham Hospital

Tutor: Michele Lee MCSP SRP

Cost: £35 (including lunch)

Apply to: Betty Hughes MCSP
Superintendent Physiotherapist
Physiotherapy Department
The Avenue School
Basingstoke Road
Reading
Berkshire RG2 0EN
Tel: 01734 313941

DYSPRAXIA WORKSHOP

This is a one day workshop which will cover lectures and practical sessions on assessment and treatment.

Date:
3rd October 1996

Venue:
Physiotherapy Department, Brighton General Hospital, Elm Grove, Brighton

Tutor: Michele Lee MCSP SRP

Cost: £30

Apply to: Chris Young MCSP
Superintendent Physiotherapist
Physiotherapy Department
Royal Alexandra Hospital
Dyke Road
Brighton BN1 3JN
Tel: 01273 328145 ext 2155

Ring for details/application.
Closing date 30.8.96

Restaurant facilities available on site for hot/cold meals or snacks.

N.B. Early booking advised as Workshop places limited to 35.

7th - 11th OCTOBER 1996

LONDON

Elements in Paediatric Physiotherapy

This course will cover the theoretical and practical management of various common paediatric topics. Each day is self contained and workshops will be included in most days. Topics to be included are:

Congenital Talipes Equino-varus
Acute Head Injury
Orthotics
Camp Variable Hip Abduction Orthosis (with certification for fitting)
Serial Casting
Gait Analysis
The Orthopaedic Management of the Neurologically Impaired Child

Fee: £30.00 1 day
£130.00 5 days
(Accommodation is available)

For full programmes and application forms, please contact:
Jacqui Tasker
Course Organiser

PAEDIATRIC PHYSIOTHERAPY SERVICE
Tower Hamlets Healthcare Trust
Mile End Hospital
Bancroft Road
London E1 4DG
Tel: 0171 - 377 - 7874
Fax: 0171 - 377 - 7808

Closing date: 16.9.96

October 30th - November 1st 1996

University of Birmingham Conference Park, Edgbaston Park Road, Birmingham B15

Paediatric Rheumatology Therapy Course

This Course is for:
Physiotherapists and Occupational therapists involved with or interested in the treatment of children with rheumatic diseases.

It includes:
Disease effects and drug therapy, PT and OT assessment and treatment, splinting, hydrotherapy, orthotics, gait analysis, parent/patient education . . . and much more!

Course Fee: £260 residential,
£160 non-resident.
Fully inclusive of meals accommodation (single en suite rooms), splinting materials, full course notes.

Application forms: Write or 'phone
Mrs. Ann Parkin,
The Childhood Arthritis Unit,
The Children's Hospital,
Steelhouse Lane,
Birmingham B4 6NH.
(0121 454 4851 Ext 6824)

SOUTH KENT COMMUNITY HEALTHCARE NHS TRUST

This progressive 4th wave Trust is the major provider of Community Health Services in South East Kent. The Trust serves an area from Tenterden in the West, to Deal on the East coast. This part of South Kent enjoys both beautiful countryside and coastal resorts.

THE PRIMARY CARE DIRECTORATE
is currently seeking a

SENIOR I PHYSIOTHERAPIST
for the paediatric physiotherapy service

We are looking for a qualified physiotherapist with at least 2 years post graduate experience to provide a service to children living in the community, to enable them to cope with their disability or illness in their preferred environment. You will have close liaison with GP's, other members of the Primary Care Team and Community Hospitals. This is a full time post, however, applicants who would prefer to work part time or on a flexible hour arrangement are welcome to apply. The base will be dependant on the location of the successful candidate, who must be a car driver. In return for your experience and dedication we graduate training, professional development, in-service training, favourable lease car scheme, possible relocation expenses and up to four months accommodation assistance. We will also pay expenses for arranged visits. For further information please contact Christo Thiardt, Physiotherapy Manager on 01303 228825.

Application form and job description are available from:
Personnel Services Department,
Ash Eton, Radnor Park West,
Folkestone, Kent CT19 5HL
Tel: 01303 222365 or 01303 222394 for 24 hour answerphone.
Please quote ref. no. PDS/310
Closing date for applications is **30th August 1996**

SOUTH KENT
COMMUNITY HEALTHCARE NHS TRUST

Senior I Physiotherapist

PAEDIATRICS

Hours negotiable £17,355 - £19,880 (pro rata)

The Paediatric Service covers the Acute and Community units working in a variety of clinical locations including The Queen Elizabeth Hospital, mainstream and special schools and patients' residences. Building of a Child Development Centre begins in 1996 enhancing the multidisciplinary team working within the speciality. Clinical experience in both Orthopaedics and Neurological Paediatrics is desired.
There is a strong commitment to training, both In-Service training and External courses.
The West Norfolk area offers a wide range of recreational activities, both sporting and cultural.
The Hospital has an active Sports and Social Club with on-site facilities for squash and tennis etc. The Norfolk coast is near at hand, providing excellent facilities for water sports.

For informal enquiries please contact Mr Nigel Tarratt, Head of Physiotherapy. Tel: (01553) 613613 - Bleep 3795 or The Physiotherapy Department. Tel: (01553) 613796. Fax: (01553) 613798.
Closing Date 27th September 1996

KING'S LYNN & WISBECH HOSPITALS
National Health Service Trust

a world of care in *west norfolk*

Notes for Contributors

The Editorial Board welcomes research material; referenced articles and evaluations of physiotherapy practice; informal articles.

Manuscripts should be sent to Lin Wakely, 2 Ash Bank, Pipers Ash, Chester, Cheshire, CH4 7EH, U.K.

Copy to be submitted should be typed on one side of the paper, double spaced and with ample margins. All pages should be numbered consecutively.

Manuscripts should provide the title of the article and the author(s) name(s) and full postal address for correspondence.

References should be given in the Harvard System.

In text	Author(s) name and initials followed by the date of publication. Use a,b, to indicate more than one publication in the same year. Where there are 3 or more authors use first name followed by et al.
For books	Laszlo, J. & Bairstow, P. (1985) *Perpetual Motor Behaviour* (Rinehart and Winston)
For chapters within books	Morley, T.R. (1992) Spinal deformity in the physically handicapped child, in : G.T. McCarthy (Ed). *Physical Disability in Childhood* (Churchill Livingstone)
For articles	Scott O.M., Hyde S.A., Goddard C.M., Dubowitz V., (1981a) Prevention of deformity in Duchenne muscular dystrophy. *Physiotherapy* 67(6), 177-80.

Tables and Figures

The approximate position of the tables and figures should be indicated in the manuscript.

Keys to symbols should be included.

Tables should be numbered by Roman numerals and figures by Arabic numerals.

Figures should be supplied in a finished form, suitable for reproduction. Figures will not normally be redrawn.

Proofs will be sent to authors if major alterations have been made to the text.

The Editorial Board reserves the right to edit material submitted for publication.

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