ASSOCIATION OF

PAEDIATRIC

CHARTERED PHYSIOTHERAPISTS

NEWSLETTER

Association of Paediatric Chartered Physiotherapists

Newsletter No. 45 **November 1987**

"FEET"

CONTENTS

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EDITORIAL

The contribution of articles for the Newsletter from a broad spectrum of professionals including our colleagues overseas, highlights the increasing expertise and awareness of paediatric physiotherapists, not only nationally, but internationally. It also underlines the fact that their skills are being used in treating an ever wider range of childhood disorders, rather than a single condition.

Like most people, paediatric physiotherapists have other skills and interests, and become involved in 'happenings' over and above the day-to-day routine, so it is with pleasure that a new section of the Newsletter is to feature some of these. Hopefully, in the coming months we will be able to expand this section as we hear more and more of what goes on after hours!

The forthcoming 1988 APCP Conference programme enclosed with this Newsletter, looks as though yet again high standards are becoming the norm rather than the exception. Don't forget to book early.

Increasingly, with new legislation, cutbacks and reorganisation, many of our members are facing problems in practice. If you are one of these people will you write to the Editor? Later next year it is hoped to have an issue of the Newsletter devoted to the subject.

Finally a Happy Christmas to all our readers and Best wishes for 1988.

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PLEASE NOTE . . . . . .

The last date for submission of material for the February 1988 Newsletter will be DECEMBER 20th - slightly earlier than usual because of Christmas. This edition will be compiled from members contributions. Have you sent yours yet ? ? ? ?

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The Editorial Board does not necessarily agree with opinions expressed in articles and correspondence, and reserves the right to edit material submitted.

FOCUS ON FEET

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In the normal infant, postural tone is higher in the lower limbs than in the upper limbs at birth, and is greater distally than proximally. Following cerebral damage, spasticity also develops distally sooner and to a greater extent than proximally, so that the problems of spasticity are often seen to be greater distally and one of our primary concerns may well be the control of this distal spasticity.

The concept of distal patterns being due to and influenced by proximal patterns caused us, for many years, to concentrate on improving head, trunk, hip and knee control in the hope that the feet would improve concurrently. If they did not, there was always the possibility of surgery later. The realization that malalignment of the feet adversely affected proximal control, as well as the realization that long-standing malalignment produced structural deformities in the feet which could not be corrected by surgery, caused us to re-examine our attitude to feet.

In order to understand how foot deformities develop we need to study the development of the normal structure of the foot. The foot consists of 26 bones, acting in unison but functionally divided into three sections. The alignment of the posterior section, consisting of the talus and the calcaneus, determines the alignment of the whole foot, whilst the middle section (the navicular, cuboid and the 3 cuneiform bones) provides the mobility which allows the foot to mould to different surfaces as well as execute complex balance reactions. The anterior section, consisting of metatarsals and phalanges, contributes further to mobility during movement in weight-bearing.

How does the foot develop? In the foetus the limb buds are visible by four weeks' gestation (Fig. 1) and by six weeks the limbs have developed into three sections (Fig. 2). At this stage the feet are very supinated - i.e. in adduction, inversion and plantarflexion with the soles of the feet opposed.

Fig 1

Fig 2

By three months' gestation the feet have rotated around the lower leg to a more neutral position; the toes and nails are also visible now (Fig. 3).

As the foetus grows and occupies the available space, the legs become more flexed, so that by six months' gestation the legs are wrapped around the body, usually with the left leg crossed on the outside of the right leg (Fig. 4).

Fig 3

Fig 4

At this stage the foetus is facing posteriorally, with the feet pressed against the mother's lumbosacral spine. (It is interesting that not only are congenital foot deformities more common in the left foot, but congenital dislocation of the hip is seen far more often on the left side or if bilateral, the left hip is usually the worst affected.)

By the time of birth the original plantarflexion has resolved, but because of the in utero position during the last trimester, the feet are again adducted and inverted. There is also mild tibial and femoral bowing and the hips are in external rotation with a mild degree of coxa vara (Fig. 5).

Fig 5

In prone the newborn shows spontaneous creeping movements, pushing against the surface with his toes, whilst in standing he shows placing reactions, primary standing and automatic walking (Figs. 6 and 7).

Fig 6

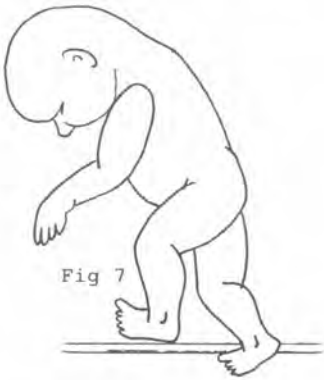

Fig 7

Although these reactions are not related to functional standing and walking, they do provide tactile and proprioceptive input which contributes to sensorimotor learning.

In supine the feet have dropped down to the supporting surface by about eight weeks of age, and the infant experiences weight-bearing on the lateral border of the foot (Fig. 8). By 16 weeks the weight-bearing surface includes the heels and from then on, weightbearing becomes distributed between heel, lateral border and metatarsal heads (Fig. 9).

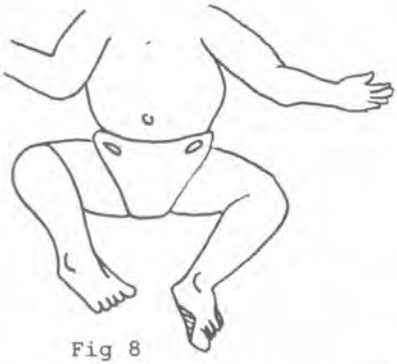

Fig 8

Fig 9

In the course of this process the longitudinal and transverse arches of the foot start to develop. The normal child starts to walk between nine and fifteen months but does not achieve full control of foot alignment until much later. The two year-old frequently shows poor alignment in weight-bearing, whilst full control of alignment during heelstrike is only achieved by 2 - 3 years and at toe-off, by 3 - 4 years.

The child achieves a so-called "adult" gait pattern by 5 - 6 years of age, but the growth plates of the foot bones only fuse at between 16 and 17 years of age. For this reason it is wise to postpone bony operations on the foot until growth is complete, since early operations may lead to increased deformity as the bones continue to grow.

The bony architecture of the foot (Fig. 10) provides stability to the weight-bearing foot during stance. This stability depends on the bony alignment, the talus forming the keystone which bridges the tibia and fibula and, as the body moves over the foot, directs the movement into the foot.

Fig 10

Normal alignment of the talus with the calcaneus is referred to as subtalar congruency. With good congruency the hindfoot is usually in very slight supination(at the sub-talar joint) whilst the forefoot is in slight pronation at the midtarsal joints; this dissociation between hindfoot and forefoot maintains the medial longitudinal arch.

Dynamic control of the foot during movement depends upon the ligaments and muscles. The ligaments lend stability to the moving foot, allowing adaptation to the terrain as well as supportive function throughout all the phases of stance from heelstrike to roll-off. The muscles provide the components of movement which determine the alignment of the different segments of the foot. The extrinsic muscles determine the alignment of the posterior and middle segments, the most important muscles being tibialis anterior and posterior, peroneus longus and brevis, and gastrocnemius. Even slight muscular imbalance will lead to malalignment - initially at the sub-talar joint and later at the midtarsal joints. The intrinsic foot muscles determine the alignment and control of the anterior segment of the foot only, and are primarily concerned with maintenance of the transverse arch and the action of the toes during roll-off.

I have said that muscular imbalance initially causes malalignment at the subtalar joint. Weight-bearing on the malaligned posterior segment of the foot directs abnormal forces into the middle segment, causing changes in alignment in the mid-tarsal joints. As the opposing muscles become progressively inhibited, stretch and lose their ability to correct the alignment, the strain is taken by the ligaments. Over a period of time the ligaments lose their integrity and eventually bony changes take place. The result very often is a completely non-functional foot. Footwear is difficult to provide and if the patient continues weight-bearing, the foot often become painful in later life.

There are basically two patterns of spastic foot:

1. The everted foot

In this type of foot the tendo-Achilles takes a lateral route, pulling the calcaneus into abduction. As a result the talus is adducted (Fig. 11).

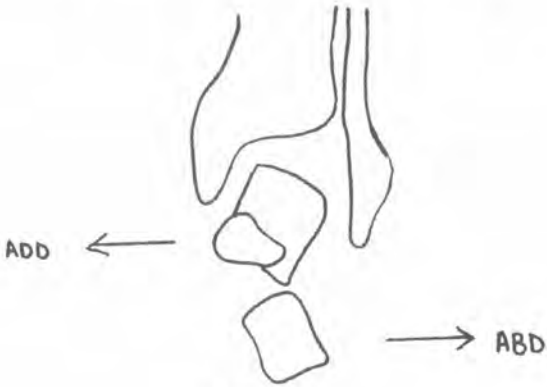

Fig 11

The cause can be either distal or proximal. Distally the cause may be functional "tightness" of the tendo-Achilles, or it may be eversion used for fixation in the low-toned child. Proximally the cause is very often internal rotation of the femur associated with an increased anterior tilt of the pelvis. In either case the foot pattern feeds back into, and reinforces, the proximal pattern - often threatening already established proximal control.

Whilst the abnormal alignment only involves the two joints of the hindfoot correction is not so difficult, but as the calcaneus abducts, the forefoot (which is fixed against the floor) is forced into supination (N.B.). This eventual fixation in supination involves no less than 14 separate joints, producing subluxations and deformities which are almost impossible to correct even surgically. In turn this malalignment eventually leads to tertiary changes in the toes, with hallux valgus and with metacarpophalangeal flexion as the toes seek the floor.

This is the most common type of foot.

2. The inverted foot

This is less common and the cause is usually distal, the tendo-Achilles taking the medial route and pulling the calcaneus into adduction, with resultant abduction of the talus (Fig. 12). This type of foot is always associated with equinus and spasticity in tibialis posterior.

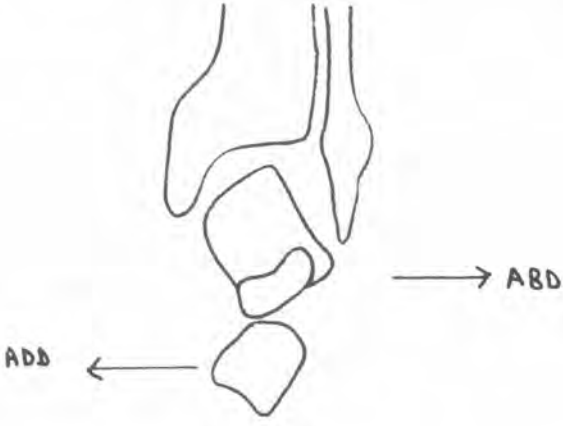

Fig 12

When the foot is fixed the tibia is pulled into external rotation - with an increasing degree of tibial torsion as the distal pattern competes with the internal rotation of the femur. Biceps femoris has been shown to be increasingly overactive here.

As the calcaneus adducts, the forefoot, which again is fixed against the floor, is forced into pronation. Tertiary changes include a tight plantar fascia and metacarpophalangeal extension, with clawing of the toes.

It is obviously essential to correct these problems whilst only the hindfoot is affected, before the exceedingly complex problems of the midtarsal joints arise.

Principles of treatment

The first necessity in treatment is to establish and maintain full mobility in all segments of the foot. Initial mobilisation may be passive and non weight bearing. It should be followed by active mobilisation in weight bearing, but not until perfect neutral alignment can be achieved and maintained in weight bearing. Weight bearing on a malaligned foot will only increase muscular imbalance by facilitating the already overactive muscles and, if an orthosis is worn, pressure sores may also develop. If the foot is mobile in non weight bearing positions but becomes fixed when weight bearing, the cause must be analysed. It could be increased tone on weight bearing, poor proximal mobility fixation for stability - or even poor positioning by the therapist! If the foot cannot be mobilised by physiotherapy alone, surgery may be required - not necessarily distally!

Once the foot is mobile in weight bearing, and weight bearing is going to be used during therapy or functional activities, a means of maintaining good alignment must be devised. Weight bearing in normal alignment will then activate the muscles controlling that alignment and specific patterns of muscle action can be facilitated by means of weight transfer and equilibrium reactions. During therapy if at all possible alignment should be controlled by the therapist rather than by a static appliance; you cannot expect the body to work dynamically if the foot is fixed. Some forms of appliance may be indicated however, particularly if the child is standing or walking at home or in school. If an appliance is necessary it must be prescribed early - for example as soon as a baby shows signs of crawling with one foot plantigrade or of pulling to standing.

Where early distal spasticity is threatening alignment - as in the toddler or nursery school child who is just starting to walk - simple cork or putty wedges may be sufficient to inhibit this by dorsiflexing the toes. These should never extend past the metatarsophalangeal joints proximally, or they will present roll-off at the end of the stance phase. I must emphasize now the need for flexible shoes with any type of orthosis. The old type of stiff leather boot, often with a steel shank in the sole, is contraindicated. If roll-off is not possible, the child is forced to swivel at toe-off, reinforcing the foot deformity.

The types of orthosis most often used are heel-seats, *U.C.B.L. - type inserts and ankle-foot orthoses. Heel-seats and U.C.B.L. inserts are designed to hold a mobile calcaneus in the midposition, allowing realignment of the talus and preventing secondary changes in the midtarsal joints. Unless the tone is generally low, they will not exert sufficient control in heavy children or those older than about five years of age. Inserts are sometimes extended distally in order to control the middle and anterior segments of the foot, but should never be extended beyond the metatarsophalangeal joints - again in order to allow roll-off.

An ankle-foot orthosis (A.F.O.) combines a heel-seat and midtarsal insert with fixation of the ankle in dorsiflexion. It has advantages over the old below-knee irons and T-straps in that it is light, not completely rigid, holds the foot in a corrected position (which boots and irons most emphatically do not!), and is much more acceptable cosmetically. Unfortunately it still holds the disadvantage of some unavoidable pressure on the calf muscles, and cannot control strong spasticity.

All orthoses should be moulded from a cast taken with the foot and ankle held in perfect alignment.

When considering a patient for an ankle-foot orthosis it may be useful to apply well-fitting below-knee casts first, to assess the result. Once again they must be moulded in perfect alignment and with full inhibition, in a non-weight-bearing position. They should have flat soles cushioned with rubber, and must allow roll-off by incorporating dorsiflexion of the toes. If the use of plasters results in hyperextension at the knee or in increased internal rotation at the hip or retraction at the pelvis, then an ankle-foot orthosis is unlikely to be successful.

The aim of any orthosis is to maintain good alignment, in order to:

- encourage the correct muscle and therefore active realignment
- provide the correct sensorimotor feedback necessary for motor - learning
- prevent deterioration in proximal control
- prevent secondary structural changes

A child or adult who wears an orthosis needs active therapy both whilst wearing the orthosis and without it. Treatment without the orthosis is essential in order to maintain mobility, whilst treatment with the orthosis on is necessary in order to activate muscle control in the corrected pattern and to ensure carry-over into all functional activities.

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Acknowledgements

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INHIBITORY FOOTPLATES

Anne Dixon (Dip Physio. (Pretoria); D.T.S.E. (UNISA)

The principles involved in the design of inhibitory footplates and the methods used to make them easily and as economically as possible are discussed here. The author was introduced to the idea of inhibitory footplates by Sarah Forsyth who demonstrated designs based on the work of Linda Yates during her advanced occupational therapy course in 1983.

The need for an inhibitory device which would prevent clawing of the toes in an adult hemiplegic patient initiated the search for a lightweight, pliable and relatively long lasting device that could be worn comfortably in a shoe. The original one was made to fit into an ankle foot orthosis (A.F.O. - worn to prevent tightening of the tendo achilles) and to correct the valgus or everted position of the foot. The hemiplegic patient in question had marked spasticity and suffered because of the clawing of her toes. The toenail of the great toe pressed into the flesh with resulting pain and discomfort.

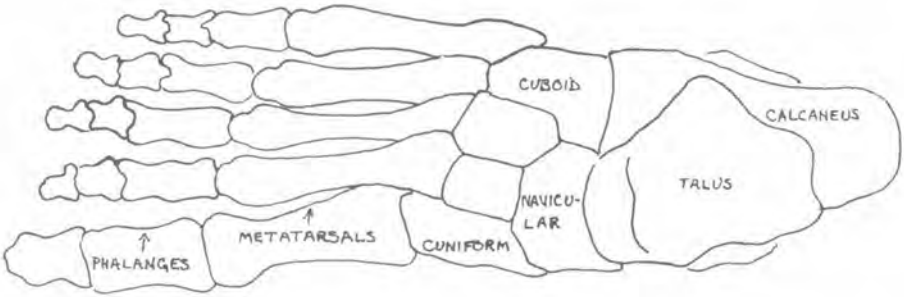
After much trial and error and a long search for suitable material, a footplate was eventually devised of plaster of Paris (P.O.P.) covered with latex. The latex prevents the POP from disintegrating and makes it more pliable. This allows for normal push-off while still providing inhibition. This corrected the foot and relieved the pressure on the toes.

This type of foot plate can be used for virtually any foot problem. The basic principle of the footplates is to change the sensori-motor experience by providing inhibition where necessary.

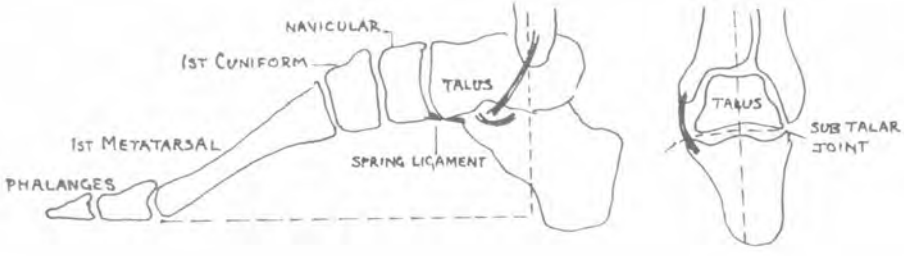
Examination of the inner sole of the shoe reveals the patient's weight bearing pattern. This information may be used as guide to decide what changes are necessary in order to change the sensori-motor experience and thus achieve a more effective and comfortable gait.

Inhibition and altered weight distribution are achieved by building up extra layers of POP in some areas (e.g. as a wedge under the toes from the metacarpal heads) and cutting out sections in other areas. The necessary correction determines how this is done, as is shown in the Footplate Diagrams.

THE 26 BONES OF THE FOOT (18-20 years for full maturation)



The foot consists of 26 bones acting in unison but functionally divided into three sections. The alignment of the posterior section, consisting of the talus and the calcaneus, determines the alignment of the whole foot (2). The middle section (the navicular, cuboid and three cuneiform bones) provides the mobility which allows the foot to mould to different surfaces as well as execute complex balance reactions. The anterior section (metatarsals and phalanges) contributes further to mobility during movement in weightbearing.



Even slight muscular inbalance will lead to malalignment - initially at the subtalar joint, and later at the midtarsal joints. Over a period of time the ligaments lose their integrity and eventually bony changes take place, resulting often in a completely non-functional foot.

PROBLEMS can be grouped into four basic categories.

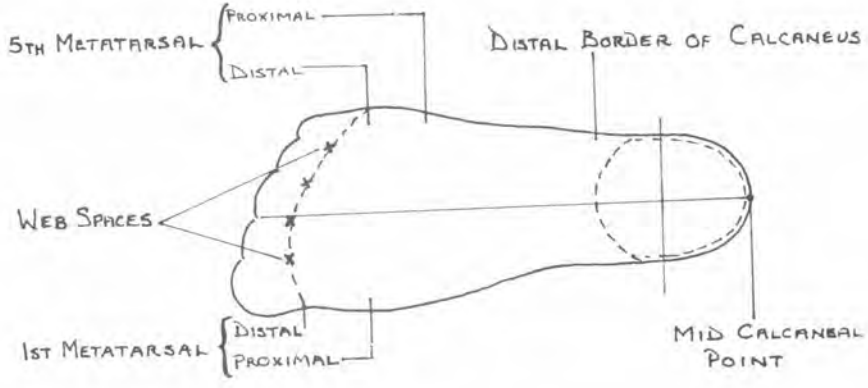
1. Developmental - flat feet.
2. Weightbearing in an abnormal position.
3. Abnormal tone (neuromuscular)
4. Bony deformities.

The footplates are made by placing the patient in a sitting position with the knees and hips at right angles. An X-ray plate is used as base.

METHOD: A Pattern Making

1. Align the foot correctly.
2. Trace the outline of the foot on to paper.
3. Mark web spaces-separating the toes first.
4. Mark distal and proximal points of the 1st and 5th metatarsal heads.
5. Mark distal border of calcaneus.
6. Mark the mid calcaneal point.

The longitudinal arch lies on a line between the 2nd and 3rd metacarpal heads and the midcalcaneal point.



FOOTPLATE B

1. Cut X-ray plate using paper pattern as guide.
2. Cover X-ray footplate with a layer of POP. (There must not be any gaps).
3. Cut 6 layers of POP according to the pattern.
4. Decide which parts of the footplate are to be dropped, and which ones are to be built up. Cut out appropriate sections in the areas where the footplate needs to be dropped. Cut out additional pieces to build up the areas in order to effect inhibition.
5. Wet POP, place on footplate, smooth down, place the patient's foot on the footplate and press down. Ensure the foot is in as good alignment as possible.
6. Build up where necessary - for example:
   divide between first and second toe if separation is required;
   add layers under toes until adequate inhibition is achieved.
7. N. B. Footplate must be checked in weight bearing and non weight bearing.
8. Make the footplate according to desired specifications and allow to dry.
9. Use an emery board to smooth any rough edges.
10. Cover with a light layer of liquid latex (I pour it on and use my fingers to smooth it. A brush can be used and will not be ruined if washed off immediately - but fingers are fine! Latex washes off hands easily and dry spills peel off the table.) Latex can be bought from any handicraft shop.

This process should be repeated about four times to coat the plaster properly. The footplate is them ready for use.

In the adult hemiplegic the insert was placed on the A.F.O. and she put her stocking covered foot on it, aligned it correctly, and then pulled a half stocking over it. This helped to keep it in place whilst she put her foot in her shoe. With children, the footplate is best used in open sandals with adjustable straps over the dorsum of the feet, or in "takkies" or "North Stars" provided that they are wide enough. Here I would use two cotton socks - one on the foot, and one over the foot and orthosis.

Children who claw a lot, especially minimally affected low-toned children, benefit from an inhibitory "button" between the 2nd and 3rd metatarsal heads.

With the more simple adaptations such as the ibhibitory button, or dropping of the lateral border of the foot, a footplate may not be necessary. One could use Pratley's putty on the liner of the shoe for the inhibitory button. One could use an inner sole and cut out the required areas to drop the lateral boarder.

If the child or adult has a full foot A.F.O. - i.e. extending to the toes - the inhibition could be achieved by building up with Pratley's putty. However an A.F.O. to the heads of the metatarsals is more effective, as this allows sufficient for push-off.

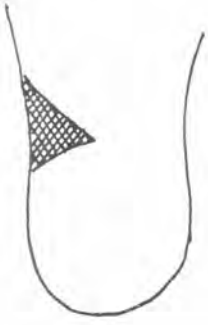
Remember to change the insert as the foot corrects.

Even children who are non-weight, such as those in wheelchairs benefit from the inhibitory correction of the foot position.

PROBLEMS AND SUGGESTED ADAPTATIONS

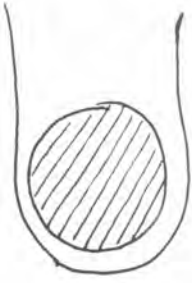
HINDFOOT (RIGHT) KEY ▩ RAISED ▨ DEPRESSED

1.



Problem: tight T.A., with moderate valgus deformity. Note: Do not depress if T.A. give is insufficient.

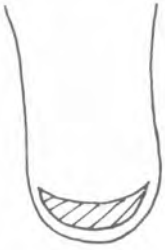
2.



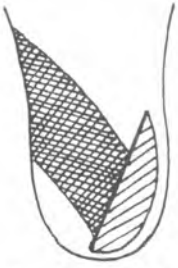
Problem: slightly tight T.A. with enough length. Calcaneus is up a bit but in good alignment.

3. **Problem:** mild valgus

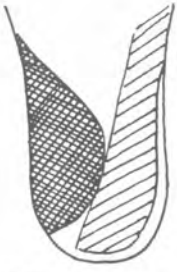
4. **Problem:** weightbearing too far forward with no varus or valgus. Therefore tilt calcaneus backwards.



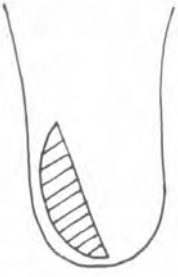
5. **Problem:** valgus deformity of mid-foot



6. **Problem:** severe valgus with displacement of talonavicular joint. i.e. midfoot valgus.

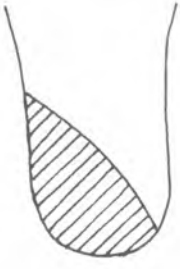


7. **Problem:** mild varus deformity. (T.A. not tight)



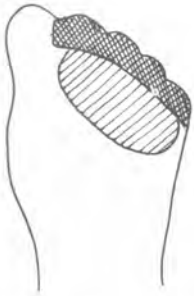
8. Slightly more varus.

9. **Problem:**
There is a need to provide traction on the calcaneus and to change the heelstrike - T.A. is loose.



FOREFOOT (RIGHT). Key: raised; depressed.

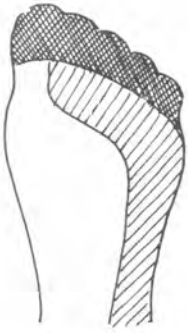
1. **Problem:** Mild valgus with toe grasp. Elevate toes by means of a wedge.



2. **Problem:** more tone
Possible positive support reaction.
Valgus with toe graps.

3. **Problem:** valgus with danger of over-correction. Button provides extra inhibition by elevating area between 2nd and 3rd metatarsal.

4. **Problem:** marked valgus.
(Hindfoot valgus and pronated.)



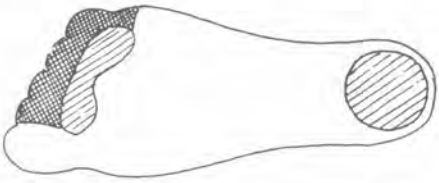
5. **Problem:** Toe grasp with no medial or lateral deviation.

6. **Problem:** Varus deformity.

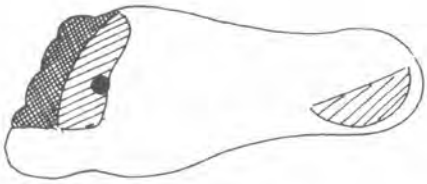
N.B. **NEVER** elevate under first toe alone because you lose the key-point of inhibition.

FOOTPLATE EXAMPLES. (RIGHT FOOT)

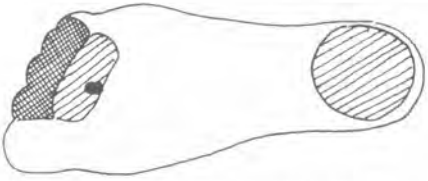
1. Problem: toe grasp with forefoot varus. Hindfoot alignment O.K.
Note: Do NOT drop 1st metatarsal head as this will cause an increase in tone and not enough stretch on the forefoot.



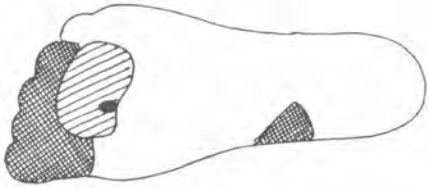
2. Problems: i) Hindfoot in varus.
ii) Forefoot varus
iii) Toe grasp.



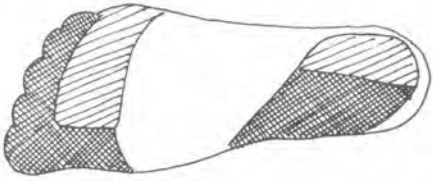
3. Problem: mostly increased tone. No medial lateral imbalance.



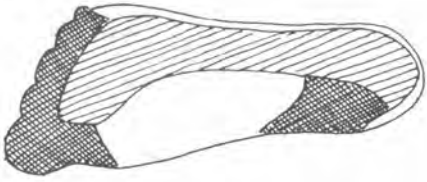
4. Problems: i. Tight hindfoot. ii. Midfoot valgus. iii Forefoot valgus. iv Increased tone.



5. Problems: i. Valgus hindfoot. ii. Midfoot valgus. iii Forefoot valgus. iv. Increased tone



6. Problems:
i. Severe valgus of whole foot.
11. Very high tone.



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* *

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MECHANICS OF EARLY WALKING OF NORMAL CHILDREN

Mr. J. H. Patrick, F.R.C.S., Cons. Orthopaedic Surgeon.

In walking, the weight of the body is transferred from one leg to the other and a gait cycle may be considered to begin at the moment of impact, called heel strike, of one foot with the ground and ends at the moment of the next heel strike of the same foot with the ground.

It is convenient to consider the gait cycle in terms of stance and swing phases of each limb.

The stance phase begins with the heel strike of one foot and ends when at toe-off the foot leaves contact with the ground.

The swing phase, which begins at toe-off, consists of the leg swinging forward to a mid-swing position when it is in line with the vertical through the centre of mass of the body and continuing onwards until the foot reaches the heel strike position. The growing child eventually achieves this walking ability between 12 and 14 months of age.

Reciprocal walking occurs when we balance on one leg then the other in the coronal plane, and then control a fall-forward in the sagittal plane. We narrowly avoid prostration when the swinging leg steadies the trunk at heel strike; at their moment both feet are grounded increasing the support area for our body weight. This double stance is safely stable but the next leg swing produces instability again and the neuro-muscular system has to develop to control this instability.

Momentum from the previous step carries the child forwards; nature exploits this available force to carry the body onwards instantly as an inertial contribution towards the next step. Part of the increased effort of much handicapped gait is explained by the squandering of this inertia, for example by the spastic who digs in each foot, nearly stopping one leg movement forwards, before changing gear to the other side - staccato movement. 'Inman was the first to show the 'fluidity' of normal gait as a double sinusoidal curve (Fig. 1), in which all the rapid movements of the body centre of mass - to one side or the other, or up and down, are smoothed out as much as possible. this conserves energy for us all. If there is disability, then energy is always wasted overcoming the problem, even if the compensation is only minimal.

This stage of development can be seen in the early walker, as he learns to smooth out his walk. Different abnormal gait patterns are often recognisable by the experienced observer and are diagnostically characteristic of several neurological or orthopaedic conditions. The gait of a cedrebellar ataxia, for example, shows a patient walking on a wide base, staggering forwards or backwards (or lurching from side to side) in an irregular manner. The diagnosis suggests itself, as it would do also in a congenital hemiparetic, or in cases of 'limp' where a Perthes' disease, slipped upper femoral epiphysis, or congential dislocation might be the orthopaedic cause.

A discussion of the abnormal condition is predictably prefaced by an account of normal walking development, the mechanisms and method used to move the body mass forwards through space. Bipedal motion characterises the human animal and is only copied by a few of our near relations, but is arguably one of the reasons for man's great success.

The instinctive objective for the growing child is movement - first kicking, then crawling and standing then eventually achieving a rhythmic and relatively effortless bipedal gait. This is a highly coordinated and intricate process affected by those 'primitive' reflexes that are widely learned and become part of the automaticity of the CNS - the postural, righting and labyrinthine reflexes, primarily. The input of sensation with its definition, correct appraisal, and learned response, is necessary obviously, and is both innate and learned.

Quadripedal gait is more primitive, since lower mammals are seen to co-ordinate movement of four limbs, and move so that three remain on the ground achieving "tripod stability". The crawling infant uses the same method, advancing one limb while the other three retain stability of the whole.

Bipedal locomotion offers great evolutionary advantages, but the quality of neural control has to greatly improve to prevent loss of stability in single leg stance.

The mastering of erect human walking is seemingly a learned process - there is no innate reflex walking ability in a congenitally blind child, for example - the walking process for him has to be painstakingly taught. With our own children, we watch this learning process - the process of integration and enjoyment of lower limb activities culminating in the success of a gradual fight to stand, then walk, despite the paucity of co-ordination, which causes him to fall, over and over again. He learns this activity, particularly the integrative pathways to provide stability and precision of movement. We are unique among primates in having such a long period of motor immaturity, but we can observe and learn the process of manipulation, locomotion and posture control and thus understand these developmental processes which occur in the normal infant and which may help us in understanding C. P. conditions and the possibilities for treatment of them.

The newborn infant will exhibit innate synergistic muscle activities to improve its chances of getting food, for defence, or gratifying itself - but it is highly unlikely that these observed muscle movements are controlled, even if they show obvious co-ordination. Again, a wakeful newborn when placed supine, will perform alternate, rhythmical, sudden flexions of its lower limbs. These have been described as 'spontaneous movements' and occur as the baby becomes more awake and excited. it has been observed (Thelan 1985) that these spontaneous movements occur in muscles that span more than one joint. The rectus femoris and tibialis anterior muscles contract more strongly than their "antagonists", to produce a primary flexion, followed by extension. The CNS control of this synergistic contraction can be very simple, and certainly is, since experimental work on newborn children has shown that there is little or no evidence of mutual inhibition. In fact as the child kicks, both agonists and antagonist muscles fire immediately, flexion occuring because the flexors are more strongly activated. Little else, though, can occur and temporal and spatial relationships of this kicking action are monotonously similar. The 'stepping reflex' of the newborn is actually a similar kicking response, and is not evidence of higher co-ordination and control, until it reappears shortly before walking is due to start.

How then, do the changes in the first 12 - 14 months allow the child to learn to walk? Very little is known about the effect of growth on the child, and the necessary integration of enlarging limbs into the neurological picture. But we can say that after this 'early' simple phase of kicking, a more upsetting, disorganised

activity develops. At this time, joint activity becomes individualised, and the infant learns how to control the action of each muscle group independently. The end result at this stage is chaos, but as neuromuscular integration of sensation and motor effect continues, these smaller units of coalitional activity become integrated into larger functional groups, first in the supine position, then in other planes, the visual and labyrinthine reflexes allowing for these. A new higher level co-ordination emerges from this period of apparent regression, and joint movements can be observed to be purposeful, first for one limb or side, and finally between the two sides. Alternating activity initially is common, but again rather primitive and automatic, like the 'kick'. This early ability disintegrates and is chaos again until approximately 4 - 6 months of age, when in-phase bilateral kicks can be accomplished, seemingly at will - i.e. voluntary control is present.

EMG investigation shows maturation of muscle activity in a similar fashion, initially agonists and antagonists fire together; reciprocal innervation (where one member of a pair is inhibited as the other fires) is seen to start at over six months of age. The maturation of the inhibitory pathways to allow, for example hip flexion without knee and ankle flexion, requires differentiation of finer units of control and their assembly into functional units, which can then be activated on a timed basis. More and more complex movements require the control of further muscle groups, with their integration into these inhibitory or delayed timing sequences. Some of these may mature at different levels of activity or age, and even, are dependent upon the bio-mechanics of the environs. Tone changes, strength, growth, (itself dependent upon nutrition and other factors), the stiffness of the limb (e.g. in a congenital hemiplegic), all have their effects. Motor learning is occuring to effect an action to a proposed movement task. Undoubtedly behaviour, imitation and teaching, play an important part in all this and have their effects upon the neural and physical development. A 'feed-back' from the rapidly changing body size and limb proportions and composition, will affect the neural and dynamic maturation of the whole infant. Conceptually, neurological development has usually been considered in isolation, and a tabulated format for each milestone becomes assumed. Although helpful in the description and definition of disease or handicap, it is not the only method of considering development, and the Paediatrician and Physiotherapist will need to widen the concept beyond the neurological clinic. Otherwise that self-organising dynamic construction of movement in the first year which allows the human infant eventually to walk will not be viewed in its global sense and the various handicaps of cerebral palsy will be considered out of the context of a total dynamic motor maturation process. This depends on an integration between the sensorimotor system and the musculoskeletal system and is still largely to be unravelled by researchers, though its practical effects are near for all of us to see and marvel at.

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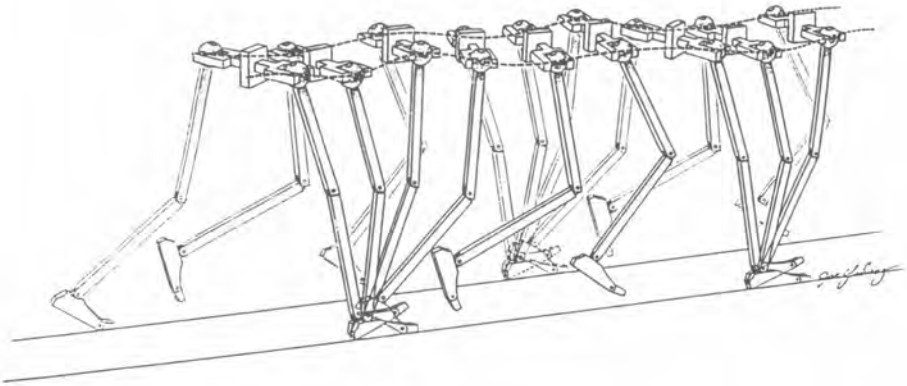


Figure 1.11. Vertical displacements of hip joints. Although the pathways of the hip joints are smooth curves they are not sinusoidal and they are 180° out of phase. (Reproduced, with permission, from Saunders et al. J. Bone Joint Surg. 35-A:543, 1953).

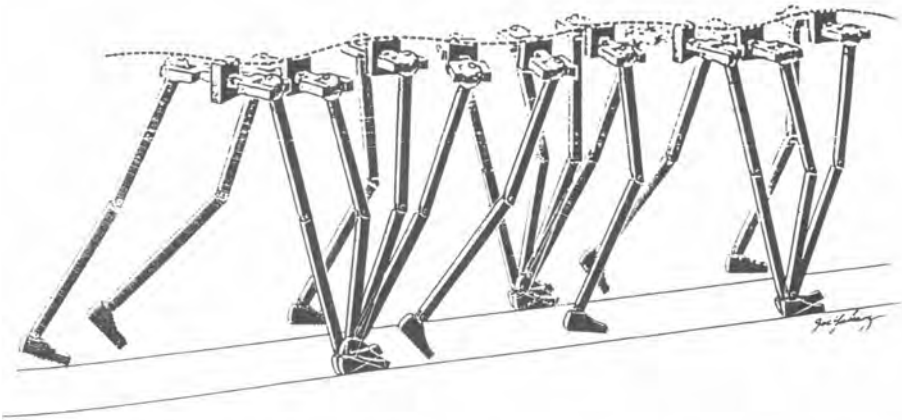


Figure 1.12. Sinusoidal pathway of center of mass. The center of mass, which lies between the hip joints, is equally affected by the displacements of each hip. The combined effect is a sinusoidal curve of low amplitude. (Reproduced, with permission, from Saunders et al. J. Bone Joint Surg. 35-A:543, 1953.)

From: Inman V. T. Human Walking. Baltimore Williams & Wilkins 1981.

THE MANAGEMENT OF CONGENITAL TALIPES EQUINO VAREUS or 'CLUB FOOT'

Mrs. A. Raffle, Supt. Community Paediatric Physiotherapist

We are particularly fortunate here in Liverpool, the home of Orthopaedics, in that not only is the Maternity Hospital situated adjacent to our own Hospital, but also in the fact that our methods have evolved over the years from the work of some of the most eminent of Orthopaedic Surgeons including Hugh Owen Thomas and Sir Robert Jones and whose original writings are still kept in the nearby Medical Institute.

Without doubt there are many excellent ways of treating CTEV in use throughout the country. We do not wish to claim that our method is any better than any others. We just offer it for your consideration as one that has stood the test of time, perhaps due to certain factors.

A baby born with CTEV is initially diagnosed by the paediatrician and then referred to the Physiotherapy Department of the Childrens Hospital on the day of its birth. One of our Senior staff will then visit the mother to put her mind at rest, and then initiate treatment for the baby.

Although parents are naturally upset when there is anything wrong with their child, they are also very relieved that treatment is to commence without delay and we feel that this is the first important factor.

After this initial contact one of our Orthopods then visits the mother, examines the foot to determine whether the deformity is genuine or positional and then gently explains the procedures which are to follow, depending upon his findings.

A GENUINE CLUB FOOT IS RIGID, INVERTED AND PLANTAR-FLEXED AND WILL NOT PASSIVELY CORRECT BEYOND THE NEUTRAL POSITION.

A POSITIONAL CLUB FOOT MAY APPEAR TO BE INVERTED AND PLANTAR-FLEXED, BUT WHEN PASSIVELY CORRECTED WILL FULLY EVERT AND DORSIFLEX EVEN THOUGH IT REVERTS TO THE ORIGINAL POSITION AFTERWARDS. A positional deformity will correct with stretching and splinting alone and will not require surgical intervention.

If the defornity is genuine, and depending upon its severity then surgery to release the tight tendon may need to be performed, usually when the child is between 4 - 6 months old, and the invertion is well corrected with splinting.

WE NO LONGER STRIVE TO ACTIVELY CORRECT THE DORSIFLEXION WITH SPLINTING, AS IT WAS OFTEN FOUND TO BE TOO TRAUMATIC FOR THE CHILD, AND NOT WITHOUT SOME RISK TO THE UNDERLYING STRUCTURES.

*A second important factor is that before any treatment is started, the positions of both feet (even if only foot is affected) are photographed anteriorly, posteriorly and medially, first in their uncorrected state and then secondly with as much evertion and dorsiflexion as can be attained without force. These photographs are then mounted and placed in the child's case sheet for future reference, and have proved to be an invaluable record.

If there are no extenuating circumstances, treatment is commenced on the following day while the baby is still in the Maternity Hospital, and it is seen daily until discharge, and then twice each week as an out patient. From then on all the treatment sessions and all the medical checks will take place in the Physiotherapy Department where we hold our own FOOT CLINICS, which is perhaps the most important factor of all, as it guarantees the continuity of approach, and also strengthens the team work amongst all those involved; in spite of the changes in staff which take place over the years.

As a rule most of the children treated are free of all splintage during the day by the age of 9 months, although they continue wearing night splints or Dennis Brown Night boots for another 2 or 3 years if possible.

No delay has yet been encountered in reaching their milestones, and most are taking their first normal steps at the age of 1 year.

Progress is monitored then throughout their growing years.

THE STRETCHING, SPLINTING AND STRAPPING METHODS USED TO TREAT C.T.E.V.

We divide our treatment into three stages:

1st Stage Splintage

Aims: To correct the inversion of the foot.

Materials:

i) A strip of 1" wide malleable metal, measured from the knee to the end of the big toe, and covered in orthopaedic felt.

ii) Three pieces of 1" wide flexible strapping - cut into 12" lengths and rerolled to prevent over pressure when applied.

iii) Cotton wadding placed between splint and skin for comfort.

iv) Tincture of Benzoin for skin care, and liberally applied.

v) Conforming bandage to cover and protect.

Procedure

To begin the stretching process, with one hand take hold of the leg on the medial side, then place the side of the affected foot in the palm of the other hand, hooking the fingers around the medial border. Holding the leg still, firmly pull the foot outwards into evertion and hold the new position for one minute, then relax. Repeat this stretch five times - Remember, HOOK - HEAVE - HOLD.

To apply the splint, the skin is first coated with Tinc. Benzoin. The splint is moulded to the shape of the deformity, padded and secured in place over the lateral aspect with the three strips of tape.

a) First strip goes around the heel, and then above and below it, in a clockwise direction.

b) Second strip follows round the foot to the **end** of the big toe - to prevent hooking - the tips remain visible to check circulation.

c) Third strip is wound anticlockwise (to prevent torsion,) from the heel, up the leg to 1" below the knee - avoid popliteal space.

A conforming bandage covers the splint and may be removed or replaced if soiling occurs.

1st stage splinting continues with gentle remoulding and resplinting twice a week, until the position of the foot will freely evert, without being overcorrected. The splint is only used to maintain the new position after remoulding but NEVER to force the position, and until the foot is round the corner and in midline, extra care of the stretched skin is essential.

The child attends the Foot Clinic every two weeks to be reviewed by the Consultant, who will carefuly monitor progress. The decision to operate to release the shortened Tendo Achilles is taken between 4 - 6 months, and surgery is followed by six weeks in plaster, with a change of plaster at three weeks. When the P.O.P. is finally removed, and because the underlying skin is dry and flaky, we now use a night splint to maintain the position for two/three days, which can be removed by the parents to oil and clean the foot. A night splint is a right angled metal splint with a dorsiflexed and everted foot plate - covered in orthopaedic felt for comfort, and kept in place with a crêpe bandage for convenience.

2nd Stage Splintage

Aims

To maintain the dorsiflexion.
In certain cases when there is some degree of 'give' in the Tendo Achilles, this splintage, together with gentle moulding may be used to achieve dorsiflexion.

Materials:

i) A strip of metal the size of the sole of the foot, and covered with orthopaedic felt.

ii) One length of 1" wide flexible tape 24" long to secure the splint. 1 short strip behind heel to prevent foot slipping backwards.

iii) One length of 2" wide flexible tape 9" long to make a stirrup.

iv) One length of 1" wide flexible tape 12" long to secure the stirrup.

Procedure:

Place the splint in position on the sole of the foot, attaching the longer length of tape to the splint, and take 2/3 turns around the foot, ending on the sole again. Then, turn the tape, taking it over the heel and ujp the back of the calf, ending just below the knee. Place the short strip behind the heel, and anchor to bottom of splint. The centre of the stirrup is placed on the splint, and positioned on either side of the leg, with a slight pull into evertion, and secured round the calf with the short tape.

For extra support use two stirrups placed over each other.

2nd stage splintage is applied weekly, and removed one day earlier each week for six weeks, when it is finally discarded. However, the aforementioned night splint is worn whenever the day splint is not.

This reduction in splintage during the day gives the child's own muscles the chance to develop, and has been found to be most beneficial.

3rd Stage Splintage

Is in reality a strapping technique as no actual splint is used.

Aims:

To mould a positional CTEVC into a better position or is used in conjunction with a night splint to maintain a corrected position.

Materials:

Two lengths of non-stretchable strapping 1½" - 2" wide, and between 9" - 12" long.

Procedure:

Place the end of the first strap diagonally across the sole of the foot from the heel to the big toe. Carefully wind it round the dorsum of the foot to encompass the whole of the big toe, and up the lateral side of the calf, pulling the foot into evertion. Secure this in place with the second strap, circling the calf.

This stage is used for variable periods of time depending upon the circumstances, therefore we would suggest adapting it to suit each individual case.

N. B.

We have been using Flexoplast Elastic Adhesive Bandage for stages 1 and 2 and Flexoplast Extension plaster for stage 3. These are becoming increasingly more difficult to obtain, and so we would be interested to know what other physiotherapists are using.

For further information re: Nights Splints or Dennis Brown Boots -

Contact: Critchley and Veale Ltd., Orthopaedic Technicians, 21 Great George Square, Liverpool L1 5DY. Telephone : 051 - 709 4514.

1ST STAGE SPLINTING

→ - Direction of strapping

■ - Cotton wool Velband or padding

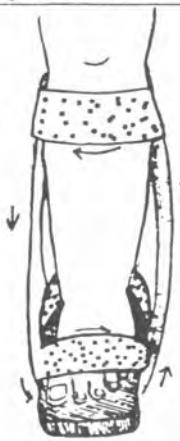
▨ - Flexoplast 2.5cm.

▨ - 'J' splint covered with Orthofelt.

Indications for Use

1) Pre-Op Splintage for a Rigid C.T.E.V. where air water.

2ND STAGE SPLINTING



Posterior View

▨ - Flexoplast 2.5c

▨ - Elastoplast 5cm Elastic Adhesive bandage

■ - Footplate, with metatarsal bar under transverse arch

→ - Direction of Strapping

Indications for Use

1) Used Post-Op CTEV postero-medial release.

Eventually weaned off this splint, one day per week, when night splints are worn. After the sixth week, therefore, second stage splintage is no longer used, but night splints are worn instead

3RD STAGE STRAPPING (RETAINING STRAPPING)

Indications for Use

1) Post-Op C.T.E.V that has started to invert again after several weeks

1) Metatarsus Varus

1) Positional C.T.E.V

Extension Plaster Orange Flexoplast

▨ - (7.5cm) cut in half lengthwise

→ - Direction of Strapping

BABY WALKERS - HELP OR HAZARD

Mrs. J. Breckon, Community Physiotherapist, Meadowside Special School.

Baby walkers seem to be regarded by parents as an essential item of nursery furniture these days. There is an idea that baby walkers help a child to walk more quickly, whereas this is not the case. Additionally, the number of accidents reported whilst children are using baby walkers is increasing.

In a recent article in the BPA Journal* the authors quoted three cases of injuries caused by baby walkers, and other problems can be noted in children using these devices.

Accidents include:

1. A seven month old baby tipped the walker backwards on to an open fire and sustained severe burns to the back of the scalp.

2. A five month old boy fell down a flight of stairs and banged his head. X-ray showed a linear fracture of the pareital bone.

3. Our local Casualty Dept dealt with a seven month old baby who, pulled the lead of an electric kettle, and sustained scalds down one side of his body.

4. An eight month old baby was in the garden and tipped the walker down two steps, sustaining severe bruising and grazes to his face.

Other problems include:

1. Children who have been in baby walkers are presenting metatarsus varus, equino varus and calcanea-valgus problems, noticed usually by Clinical Medical officers at the six month assessment, or the Health Visitors at the nine month assessment. These are usually minor and easily correctable conditions, but most mothers comment that the problem became more obvious when the baby was in the walker. It would seem it is because the small muscles of the feet are unable to cope with weight bearing such a young age, and if there is a tendency to in or evert, it is aggravated by a baby walker if it is used for the very young.

2. A baby aged eighteen months was observed at an assessment, unable to crawl or roll, and when weight bearing was tested, the baby screamed and panicked. he was a normal baby who had been in a baby walker since he was very young, and had never experienced the normal activities leading up to walking. A task analysis of walking shows that the first action leading to it is rolling over.

3. Children enjoy being in baby walkers, so they are a source of relief to the mothers who have difficulty in coping with active babies, while they are trying to catch up with the household chores. A mother may fail to appreciate the dangerous situations a child can find itself in.

4. The mother of a child with spastic cerebral palsy may feel she is helping her child to experience weight bearing, by putting him in a baby walker before he has even gained head control. This is often in spite of entreaties from the Physiotherapist not to use the walker as it is likely to increase extensor spasm.

Comments:

Baby walkers are not a new idea, records have been found of their use during Victorian times, but in the past they have only been available to more wealthy families. Nowadays though, it seems that bringing up a child without one is impossible.

*Figures of accidents in the home have been gathered by the Home Accident Surveillance System (H.A.S.S.) since 1977. These figures show an increase in the number of accidents involving baby walkers by a staggering 235%. This is compared with accidents caused by other transport devices where the increase was 128%

It is vital that parents know and understand the dangers and disadvantages of baby walkers. Current literature on accidents in the home, available in Health Centres does not include baby walkers as potential hazards. As Paediatric Physiotherapists we are in an ideal position to warn parents and Health Visitors, and to spread information about the dangers.

One of the main problems is, every parent wants her child to walk before other peoples' children. It must be impressed on mothers that a baby is not going to accelerate or improve gait, and if a child is placed in this device he must not be left alone.

Can we not, as a body, bring any weight to bear? Currently there is no obligation on the part of the designers or manufacturers to comply with recommendations of the British Standards Institute, nor on the part of the retailer to ensure these have been met. Today legislation demands that we are strapped in our cars, helmeted on our motor bikes. Should we not insist on safety standards for our babies? Cigarettes carry a Government Health Warning, why not one for baby walkers?

*B.P.A. Journal May 1987
Baby Walkers-Time to take a stand.
By D. N. S. Gleadhill, W. J. Robson, R. E. Cudmore and R. S. Turnock.
Accident & Emergency DEpt. Royal Liverpool Childrens Hospital, and
Alder Hey, Liverpool.

* * * * * * * * * * * * * * * *

Editors Note:

Since this article was submitted it has been announced that a National survey of Baby Walkers is to be conducted, as part of a Common Market campaign to improve child safety in Europe. In 1985 there were 238 accidents involving the devices. (Daily Telegraph 30.9.87).

SERIAL SPLINTING IN HEMIPLEGIC CEREBRAL PALSY

Mrs. M. Jones. Supt. Paediatric Physiotherapist

For the last ten years, it has been the practice at Burnley General Hospital, to serially splint paediatric patients who present with a hemiparesis. The purpose of this article is not to describe the technique or procedures, but rather to reflect upon the experience gained in using the treatment during this period and to suggest possible areas for future development. I first observed the technique in 1960 when working with Hans De Rijke in Plymouth. The development was evolved as a result of adopting a distal rather than a proximal perspective to the problem of the treatment of gait abnormalities associated with spasticity. It was this early experience which influenced my own approach to the problem when I became responsible for the paediatric physiotherapy service at Burnley. With the agreement of the then Paediatric Consultant, Winston Turner, this alternative to the automatic referral for tendon lengthening became available. Since that time, and with the support of subsequent Consultants, the practice has become the norm in Burnley, where none of our hemiplegic patients have since been referred for operative procedure. With the active support of the A.P.C.P., and the inclusion of serial splinting and gait workshops in the Paediatric Post Registration Course, "Introduction to Paediatric Physiotherapy" there has been a widespread adoption of the technique in Paediatric Therapy units across the country. Currently, research into the technique is being carried out in Hong Kong, by a former post registration student. In 1985, I was able to observe similar techniques being used in a number of Australian centres.

Another technique, inhibiting casting, relies on prolonged positioning of the foot for several weeks in a neutral plantigrade position.

Future studies which may provide evidence of muscle adaptability and, or neurological inhibition will help to determine the most appropriate method.

I feel that it is important to appreciate that, with a history of successful treatment incorporating serial splinting spanning a period of more than twenty five years patients, there still does not exist a clear understanding of the underlying neurological processes involved. What is certain, is that the procedure is effective. What is needed is more evidence of why this is so. I endorse the observation made by one of the speakers at the World Confederation for Physical Therapy - "The clinical problem solving process involves not only the analysis of motor behaviour and consequent intervention, but also the ability to extrapolate relevant information from current scientific knowledge and use this information to develop clinical strategies for the motor disabled." SHEPHERD (1987).

Whilst accepting the preceding observation on difficulties of explanation for the success of the method, it must be also acknowledged that the widespread acceptance and adoption of the technique over a significant period indicates a general belief in its effectiveness. It is proposed therefore to consider some issues of "When", "Why", and "How".

WHEN

In all cases where there is evidence of a poor gait pattern associated with hemiplegic cerebral palsy.

In very young children referred with the condition, prior to the developmental stage of pull to standing, where it is considered that the paucity of spontaneous foot movement and the tendency to a plantar flexed and valgus foot posture will eventually lead to a toe heel pattern of walking.

The technique is not of course limited to patients with hemiplegic cerebral palsy. Bilateral problems associated with diplegia, both ataxic and athetoid will produce beneficial results but of a more complex nature. It has been used in the correction of limb deformities in the new born, and in the treatment of contractures resulting from the development of scar tissue following accidental trauma but these are out of the scope of this article.

In the treatment of **established** poor gait patterns the time needed for the serial correction from plantarflexion towards dorsiflexion is variable and is a function of age, the type and degree of spasticity, and the frequency of application.

In the early treatment of the condition the aim is to ensure that standing/coasting round furniture are established in as normal a manner as possible enabling movement to be as effective (and consequently physiologically efficient) as possible. Once the over correction has been achieved and a heel strike gait pattern has been facilitated, then the necessity to repeat the procedure will be determined by a deterioration in the gait pattern. This interval appears more likely to be prolonged where treatment has taken place at an early stage in the child's development, possibly due to the early establishment of a good motor pattern. There may be also a considerable parental influence on the interval between episodes of casting related to their degree of diligence in ensuring treatment exercise programmes are ahered to. The parents will need extra encouragement during periods of the child's growth spurts and periods when motivation is low.

WHY

It is considered that this parental involvement in the decision to adopt the procedure, the applications of casts and the subsequent regime of home exercise programmes, is a major advantage of the method. There is likely to be a greater understanding on the part of the parents of the responsiblity for the child's well being because of the interactive nature of the procedure than would be the case with surgery.

Decreased associated spasticity can be a bonus in some patients and good results can be obtained from serial casts of elbows and hands.

Ankle Foot Orthoses have been found to be helpful after a series of casts if the foot requires further support, or can themselves be used serially.

Perhaps the most significant advantage over the surgical alternative is the non-invasive nature of the treatment with its zero risk factor.

Because, in the majority of cases, treatment cycles can be arranged so as not to interrupt schooling, socialisation processes of play activities and to coincide with times convenient to parents, the disruption of normal family life is minimised. Once treatment has commenced, it is normally very soon accepted as being a painless process and the consequent psychological comfort to both the child and parent cannot be undervalued. Indeed, making the cast decorative with stick on pictures or bright colours transforms a visible sign of disability into a status symbol in peer group evaluations. Both early and late intervention must be accompanied

by a specific programme diligently followed through growing phases and times of low motivation.

HOW

With care the cast is applied in a series of gradual stretches from plantarflexion to over corrected dorsiflexion at approximately weekly intervals. As previously indicated the number of casts required varies greatly depending on the condition, the severity of any spasticity and the degree of any contractures present.

There are many casting materials now available although initially plaster of paris was used. Choice may be determined by a number of factors such as cost, availability, ease of application or removal. Delta* cast is a useful material which is easily removed by plaster shears and if necessary, has the added advantage of being easily removed at home by parents using strong scissors.

A detailed step by step guide to serial splinting can be found in "Serial Splinting in Hemiplegic Cerebral Palsy" Jones (1982).

SUMMARY

I think that in conclusion is it appropriate to reflect on the situation which now prevails in terms of the use, neurological processes and effectiveness of serial splinting. The appended sample of relevant papers which is by no means comprehensive, serves to indicate the wide interest and research activity on and around the techniques of lower limb casting. Further, they provide some interesting alternative perspectives of possible mechanisms by which the technique can be said to function. Of one thing, I am totally persuaded, namely the general effectiveness of the method in a wide range of cases. What is now needed may well be an eclectic approach - ".... physiotherapists tend to be enthusiastic subscribers to one of the many management models.... With views based on subjective observation, rival supporter have tended to contest the opinions of others, a phenomenon shown in the writings of Bobath." Basmajian (1971) and Harris (1978). The significance and implications for neurological physiotherapy of the motor learning model Turnbull (1982) is one example of the importance of adopting as broadly based approach as possible to the understanding of not merely "what happens", but "why it happens". It has been reported Gossman et al (1982) that ".... studies have shown that when muscle is subjected to imposed changes in length, it undergoes anatomical, biochemical and physiological changes that are not immediately obvious nor readily considered." It is suggested that muscle is one of the most mutable tissues in the body, with the possibility of both positive and negative implications for function. "Muscle appears to be dynamically changing from moment to moment in response to the patterns of use imposed upon it. It is likely that our success or failure with our patients will frequently depend on our ability to understand and use this dynamic capacity." Rose and Rothstein (1982). A clear understanding of the mechanisms of what is undoubtedly an effective intervention process might well point the way towards even more appropriate or effective developments in serial casting. That I suggest is the next phase.

SUGGESTED READING

CAMPBELL S.K. 1986 — Assessment of the Child with CNS Dysfunction. - Measurement in Physical Therapy. Rothstein J.M. (Ed.) Churchill Livingstone.

LAUGHMAN R.K., ASKEW L.J., BLEIMEYER R.R. & CHAD E.Y. — "Objective Clinical Evaluation of Function: Gait Analysis" PHYSICAL THERAPY Vol. 64 No. 12.

LEHMANN J.F., ESSELMAN P.C., KO M.J. & SMITH J.C. 1983 — "Plastic Ankle Foot Orthoses: Evaluation of Function" ARCHIVES of PHYSICAL MEDICINE

MAKI B.E., ROSEN M.J. & SIMON S.R. 1983 — "Modification of Spastic Gait through Mechanical Damping" JOURNAL of BIOMECHANICS Vol. 18.

MEDEIROS J. 1984 — "Automated Measurement Systems for Clinical Motion Analysis." PHYSICAL THERAPY Vol. 64. No. 12.

MOTTRAM R.F. 1983 — "The Effects of Training on Muscle Metabolism & Blood Supply" PHYSIOTHERAPY 69. No. 6.

WATT J., SIMS D., HARCKHAM F., SCHMIDT L., McMILLAN A., & HAMILTON J. 1986 — "A Prospective Study of Inhibitive Casting as an Adjunct to Physiotherapy for Cerebral-Palsied Children" DEVELOPMENTAL MEDICINE AND CHILD NEUROLOGY 28.

ZACHAZEWSKI J.E., EBERLE E.D. & JEFFERIES M. 1982 — "Effect of Tone Inhibiting Casts and Orthoses on Gait" PHYSICAL THERAPY 62.

REFERENCES

BASMAJIAN J.V. 1971 — "Neuromuscular Facilitation Techniques". ARCHIVES of PHYSICAL MEDICINE & REHABILITATION 52.

GOSSMAN M.R., SARMANN S.A., & ROSE S.J. 1982 — "A Review of Length-Associated Changes in Muscle - Experimental Evidence & Clinical Implications" PHYSICAL THERAPY Vol. 62. No. 12.

HARRIS F.A. 1978 — Facilitation Techniques in Therapeutic Exercise. Basmajian J.V. (Ed.) Williams & Wilkins, Baltimore.

JONES M. 1982 — Serial Splinting in Hemiplegic Cerebral Palsy. A.P.C.P. Publications.

ROSE S.J. & ROTHSTEIN J.M. 1982 — "Muscle Mutability Part 1 General Concepts & Adaptations to Altered Patterns of Use" PHYSICAL THERAPY Vol. 62. No. 12.

SHEPHERD R.B. 1987 — Movement Science & Physiotherapy - Deriving Implications for the Clinic. Proceedings Tenth Int. Congress of the World Confed'n for Physical Therapy.

TURNBULL G.I. 1982 — "Some Learning Theory Implications in Neurological Physiotherapy" PHYSIOTHERAPY Vol. 68. No. 2.

LEISURE ACTIVITY MOTIVATORS

Listed below are a number of reasons that people have expressed when asked why they enjoyed specific leisure activities. This list is provided as a tool, to help you specify the reasons that YOU participate in the leisure activities that you enjoy.

— to meet new people
— for the competition
— for the physical exercise
— to learn new things
— for a change of pace, variety
— as an emotional outlet
— to practice old skills
— to relax, reduce stress
— to finish something
— to share with family, friends
— to explore new things
— for the time to think
— for distraction
— to be creative
— to be spontaneous
— to keep busy
— to make something tangible
— to be with other people
— for the mental exercise
— to increase knowledge
— to increase skills
— to increase confidence
— to share knowledge with others
— for fun, pleasure, enjoyment
— for sensory stimulation
— to be outdoors
— to be alone, independant
— to improve oneself
— for self-motivation, direction
— to confront fears
— to help others
— to accomplish something
— to demonstrate skills to others
— for the challenge

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NEW BOOKS

★ **Living with Epilepsy.**
Dr. David Chadwick and Sue Isiskin.
McDonald Optima £4.95.

★ **Special Needs in Ordinary Schools.**
Children with Speech and Language Difficulties.
Alec Webster and Christine McConnell.
Cassell £6.95.

★ **Disabled People in the Community.**
(a study of housing, health and welfare services) A. Borsay.
Bedford Square Press, 26 Bedford Square, London WC1B 3HU.
1986 £9.50.

★ **Working Together towards Independence.**
(Non teaching assistants & children with physical disabilities) J. Male & J. Ward.
RADAR: 25 Mortimer Street, London W1N 8AB.
1987 £1 (p&p) 20p.

SPECIAL FOOTWEAR MANUFACTURERS

Some of the manufacturers of Special Footwear are listed below.

SOMA (UK) Ltd., 3 Moss Street, Liverpool L6 1EY. Tel: 051 207 3539.

John Drew (London) Ltd., 433 Uxbridge Road, Ealing, London W5 3NT.

REMPLOY (Remmedi Footwear), Medical Products Division, 415 Edgeware Road, Cricklewood, London NW2 6LR.

Gilbert & Mellish Ltd., 499-503 Bristol Road, Birmingham B29 6AU. Tel: 021 471 3955.

AMBA Marketing Ltd., Leicester Street, Bedminster, Bristol BS3 4DF. Tel: 0272 631455.

Cumbria Orthopaedic Ltd., Floor 6, Shaddon Mill, Shaddongate, Carlisle. Tel: 0228 29774.

Radford Orthopaedic Co. Ltd., Rebecca House, Rebecca Street, St. Westgate, Bradford. Tel: 0274 723729.

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ARTICLES OF INTEREST

Title: **Pitfalls in Developmental Diagnosis.**
Author: Prof. R. S. Illingwoth.
Source: Archives of Diseases in Childhood 1987 Vol. 62. pp 860-865.

This paper describes some of the difficulties and pitfalls of developmental diagnosis. The author considers it a mistake to consider developmental diagnosis easy and requiring little training. Mistakes can lead to considerable parental anxiety and be tragic for the child. There is little literature about the pitfalls, and the author is anxious to fill this gap - he believes most errors are due to over-confidence.

He begins by outlining six general principles:

(1) thorough knowledge of the normal or average **(2)** the differences of ranges of development between children. **(3)** level of development is end result of many factors **(4)** the mentally subnormal child is retarded in all aspects of development, except sometimes in gross motor skills. **(5)** some fields of development are more important in diagnosis **(6)** diagnosis should always be based on a comprehensive, accurate history, a full physical and developmental examination, special investigations if relevant and interpretation of the whole.

The latter five aspects are discussed in detail and some frequent mistakes are pointed out. The article concludes that after detailed examination it is frequently possible to say much about a child's developmental potential. However, developmental diagnosis can be difficult and the wise doctor will learn from his mistakes.

Title: **Lower Limb Deformity and Prevention of Scoliosis and Cerebral Palsy.**
Author: Dr. P. Robson, Dept. of Child Health, Kings College Hospital, London.
Source: Archives of Disease in Childhood, 1987 Vol. 62 pp 547-548.

This article begins by outlining situations in which deformities can occur. He states contractives seldom occur without hypertonia. For those children who teach themselves to stand before the age of three prospects for independant walking are good, and only 25% of spastic and rigid contractures in this group require surgery, usually of TAs and hip adductors.

Potentially walking, or walking children.

Improving quality and quantity of voluntary movement is not easy, because children use their most efficient way of getting around. Description of aids and appliances most frequently used then follows. The use of serial below knee plastering is discussed as well as the use of non sedative muscle relaxants.

Non-walking children.

The most frequent contractures found in this group of children are outlined. The author considers these are best treated surgically, but the use of appliances which maintain a posture at the expense of mobility are useful and acceptable. He suggests the initiating postural assymetry should be controlled by various means during the first year of life.

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Title: **Swivel walkers in Duchenne Muscular Dystrophy.**
Authors: J. R. Sibert, V. Williams, R. Burkinshaw, S. Sibert, Llandough Hospital Penarth, University Hospital of Wales Cardiff, Pentwyn School, Cardiff, Wales.
Source: Archives of Disease in Childhood, Vol. 62. 1987 p. 741.

This article describes the experience of the authors use of swivel walkers to prolong the mobilisation of boys with Duchenne Muscular Dystrophy school in for the physically handicapped in South Glamorgan. It begins with a brief history of the use of various types of calipers, especially swivel walkers.

In 1984 swivel walkers were introduced in special schools in this area. Two types of walkers have been used, initially the Shrewsbury type, but more recently good results have been gained with the Salford Swivel walker. Up to now, eleven boys have been actively chosen to use these walkers as part of a programme of physical treatment.

The boys are placed in their calipers by physiotherapists and helpers, it taking people two or three minutes to do this. They are then encouraged to walk between classes, the distance travelled varying from 200 metres to only a few. Each apparatus costs £600. Parents are encouraged to take them home for week-ends and holidays.

Morale has improved in all the boys using the apparatus, and in some cases performance has improved as measured in distance travelled and speed. Elective operations of the Achilles tendon have been performed in most cases to help with the use of these walkers. So far these walkers have been used in special schools, but some success has been achieved with one boy in a mainstream school. A considerable amount of therapy time is needed with close attention from the orthotist and paediatrician, but the boys have a greater interest in life and are less depressed.

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FORTHCOMING COURSE

"Orthopaedic Aspects of Paediatrics

Date: Monday November 16th 1987.
Venue: Beighton General Hospital.
Cost: £15 inc. lunch, tea and coffee.

The day will include the orthopaedic and physiotherapy management of congential dislocation of the hip and talipes equino-varus; serial splinting with Delta-cast to improve gait and strapping techniques for common lower limb problems.

Please send cheques, payable to "Physiotherapy Dept. RACH" together with your name, address, daytime telephone number and s.a.e. to: Chris Young, Supt. Physiotherapist, Royal Alexandra Childrens Hospital, Dyke Road, Brighton, Sussex.

LETTERS TO THE EDITOR

In West Somerset we have to continue to fund raise for essential Paediatric Physiotherapy equipment to enable us to purchase corner seats prone boards, side lying boards, standing frames, therapy balls, ladder back chairs and platforms, Peto plinths, stools etc and specialised toys.

We fund raise by running a Gymkana once a year - by giving talks and begging for money, and generally making our needs known to the local Carnival Committee, Church, Lions, Round Table plus the Hospital League of Friends, B.B.C. Children in Need etc.

The Hospital where the work is centralised, did give us a £1000 from hospital free monies - which was soon spent. We do not have a budget, money is getting tighter and hours are being cut.

The community staff covering the West Somerset area consists of two F/T Paediatric Physiotherapists, and ten part time physiotherapists. I really feel we should have a budget - after all policemen do not have to fund raise for Panda cars or Handcuffs! I must admit to feeling tired and despondent in having to do my job,

fund raise in my own time, attend local meetings for ASBAH and Cerebral Palsy, run courses twice yearly plus help to write a book for the local authority.

The NHS runs on the enthusiasm and good will and stress of its workers. There is no secretarial help available and only a promise of more pressure from management. Education and Health each want the other to foot the bill for physiotherapy, and so it goes on?

Does anyone else feel as I do? How does one cope?

We all want to do our best for each individual child, we all need to keep up to date with equipment, treatment, new ideas and what is available. Administration and work goes home, so that day to day notes are kept up to date. I never seem to have time to plan in advance much less get involved with new innovations.

To say that Child Development teams should be set up by 1990 in all Health Authorities, leaves us three more years to cope with the present situation. It isn't a question of complaining - but I would like to know if other areas of the country have the same problems that we are experiencing?

Hilary J. Smith, MCSP ONC
Supt. Paediatric Physiotherapist

Would any physiotherapists treating multi-handicapped children with:

1) Abnormalities of the 12P chromosome (mosaic tetrosomy) - the Killian Pallister syndrome or
2) Abnormalities of the 10Q chromosome (no name to this syndrome)

Please get in touch with the address below:

Wendy Heppenstall MCSP, The Willows Child Development Centre, Peddars Lane, Ashton, Preston PR2 2TR.

It may be of interest to readers to know that in Preston they are also treating children with the following conditions:

1) Wolf-Hirschon Syndrome (4p chrome deletion) - Girl aged 5.
2) Smith-Lemli-Opitz Syndrome (Boy aged 3).
3) Deletion abnormality on chromosome 2 (Boy aged 3) now walking.

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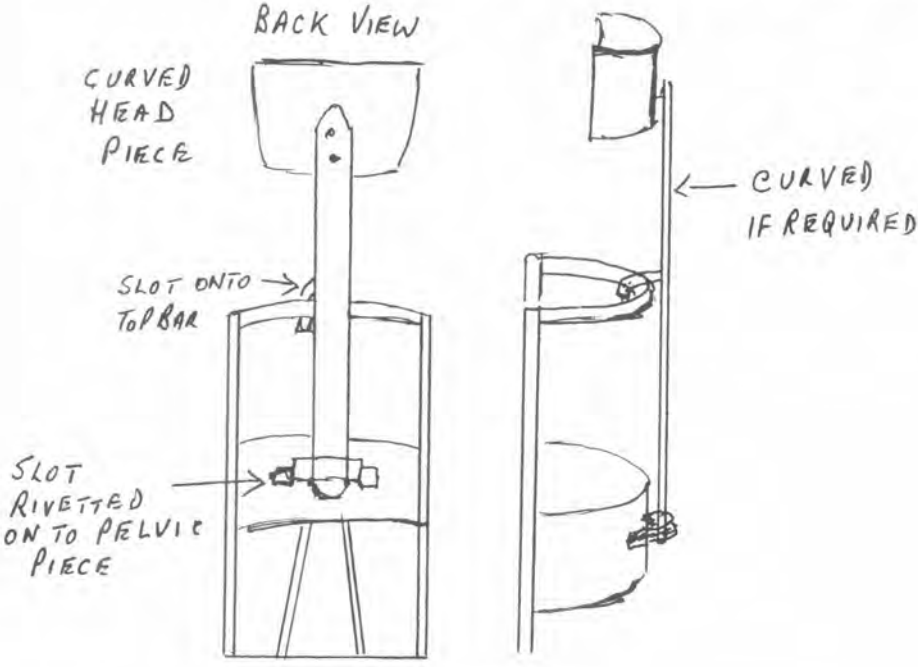
Earlier this year, we had a near disaster when a young man with Muscular Dystrophy, fell over backwards and hit his head on a nearby wheelchair, whilst using his 'clicker walkers'. Up to this time we had been under the impression that for Dystrophy boys these walkers were 100% safe.

Contacting Hebden Green School, revealed that they had suddenly found unstable clickers being used.

I took the 'clickers' to Professor Edwards at Salford who found them to be slightly off balance, after which all our clickers were rebalanced by our own orthotist. Since then, wishing to be doubly sure, and in conjunction with our orthotist we have added a headpiece (see diagram).

It is a safety precaution I would urge others to use. Should anyone else have other ideas on the subject. I would be interested to hear from them.

M. A. Hill, Supt. Physiotherapist, Physiotherapy Dept.
Frederick Holmes Special School, Inglemire Lane, Hull.



NEW PRESIDENT FOR CYSTIC FIBROSIS RESEARCH TRUST

The CF Trust announce with great pleasure the appointment of The Rt. Hon. Lord Crook, K. St. J., J.P. and Mr. Joseph Levy CBE BEM., as Honorary Life Presidents upon their retirements as President and Chairman respectively. Both Lord Crook and Mr. Levy, together with John Panchaud, were the original founders of the Trust in 1964, and have rendered unstinting and outstanding services to the Trust over many years. It is hoped that they will remain in close and continuing association with the Trust for many years to come. Sir John Batten, KCVO., MD., FRCP., has most generously agreed to take over as President. This is a particular honour for the Trust, with whom he has been associated since 1965. Due to his record of work with Cystic Fibrosis, he is held in great affection by his CF patients, his colleagues and his staff. It is entirely appropriate that he should be taking up this office at a time in the Trust's history, when so much progress has been made towards a better future, but when so much has yet to be done. The Trust will benefit from his wise leadership in the exciting years ahead. Mr. Peter Levy, currently Vice-Chairman, will take over as the new Chairman of the Trust.

BOOK REVIEW

HANDWRITING
Theory, Research and Practice by Jean Alston and Jane Taylor.
Published by Croom Helm 1987.
Hardback £25. Paperback £10.95.

This as a book full of valuable information for all disciplines involved with the teaching and remediation of childrens handwriting. It has not a sentence of wasted reading.

Jargon is kept to a minimum by all contributors. The text is straight-forward and fascinating reading for those with experience in this subject, and for those newly interested.

The theoretical information is clear and can only enhance interdisciplinary understanding of problems the children may have. The research results answer many of the questions practitioners ask of themselves, whilst the practical guidelines are a sound basis from which to develop skills.

From a therapists point of view, perhaps the emotional state of the child related to handwriting, merits more consideration than the authors deem necessary, and they seem to suggest that all parents should be encouraged to help, which I question.

This is a valuable book to add to paediatric department libraries.

TOYS

Double-Sided Ball Box

This fascinating piece of equipment is expensive because it is as tough as a police riot shield, using the same material for the transparent top and bottom. Two dozen ball-bearings roll through holes in the centre panel with results that are as pleasing to the ear as to the eye. A really superb aid to developing hand-eye co-ordination, powers of manipulation and concentration. Makes people really look at what they are doing. Dare we suggest it? excellent therapy for hard-worked therapists to. 13" x 10" x 4". Price £44.50.

Snake

Produced in response for requests for a piece of equipment to teach left-to-right sequencing. If the head is placed on the left, it is difficult to build up the body other than from left to right. Great fun, the Snake has also proved useful in helping to teach 'clumsy' children. It is bright yellow, with a green tongue, black and white eyes and a blue pattern. Length 28". Price £16.50.

Peg Semicircle

A very simple piece of equipment with large knobs on the pegs, making them easy to grasp and place in holes set around the circumference of a vertical semicircle. A most attractive piece of equipment, with seven different coloured pegs. 15" x 9" x 4". Price £21.00.

Lateral Posting Box

An open-fronted box with the sides inclined inwards to give improved visibility. The balls and squares are posted laterally inwards. Both shapes make a good noise as they hit the raised base, and the balls roll to the front of the incline built into the base. Four of each shape are provided. 11" x 8" x 8". Price £22.50.

Lateral Rotating Disc Puzzle

The principle of the Rotating Disc Puzzle applied for lateral movement. The discs with their offset slots pass over the dowels one way and not the other, moving from a flat position one end to the same position the other. Four discs are provided, each a different colour. 18" x 6½" x 4½". Price £17.50.

Lateral Stacker

A visually impressive piece of equipment consisting of two upright 'Stack-a-Shapes' placed on either side of a central stand, one side painted yellow, the other dark blue. The corresponding shapes are again placed on laterally. Four sets of each of the three shapes in each colour are provided. 14" x 13" x 7". Price £41.00.

All the above toys are available from Huntercraft, Ramsam Stable, Priestlands Lane, Sherborne, Dorset, DT9 4EY.

HAL'S PALS

Brought in especially for Nottingham Rehab from the U.S.A. Hal's Pals.... for children with a challenge to face. Introduced for the first time in the UK a unique and exciting group of soft sculptured 19 in. tall huggable and inspired play friends - Hal's Pals.

Hal and his pals are designed not just to help disabled children become accustomed to new braces, wheelchairs and tough trips to doctors and hospitals, but also to promote understanding of the challenge of disability in all children.

Hal's Pals.... and special charities, Mattel, one of the world's largest toy manufacturers set up a separate company 'For challenged kids by Mattel Inc.', to distribute the profits made from the sale of Hal's Pals to charitable organisations concerned with the care of disabled children in the U.S.A.

Good idea? adopt with child's own favourite toy.

Colouring Books - Hal's Pals

Set of 20 colouring books and one classroom conversation booklet. Written by Susan Anderson, whose inspiration led to the creation of Hal's Pals the conversation booklet is a simple guide to suggest classroom discussions for children of play school and primary school age.... introducing them to the subject of disability. The booklet is not intended as an in depth aid for one to one therapy with a disabled child. Price - Set £15.80.

Further information on the above two items available from Nottingham Rehab, 17 Ludlow Hill Road, Melton Road, West Bridgford, Nottingham, NG2 6HD. Tel: 0602 234251.

Climbing Bear

Hang him up. Work the strings and watch him climb. £2.15.

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HOLIDAYS

Queen Elizabeth's Foundation for the Disabled

This Foundation runs a holiday home for severely disabled men and women on the sea front at Westcliff-on-Sea, Essex. Volunteers 18 years upwards are needed for 1 or 2 week periods from April to November. Most of the guests at the holiday home are confined to wheelchairs and may need personal help with washing, dressing, feeding, etc. Volunteers work with the permanent nursing staff to care for the guests and accompany them on outings to shops, cinemas, theatres, pubs, sight-seeing trips, etc. Full board and accommodation are provided free of charge and a contribution made towards travelling expenses. Further details available from Mary Hurn, Holiday Organiser QEFD, Leatherhead, Surrey, KT22 0BN. (Tel: 037284 2204).

Activity Weeks at Ellerslie Court

Ellerslie Court is a house that caters specifically for people with a disability, but where the emphasis is on the fact that ones disability should not be a handicap. It is situated in Southport near the beach and the famous Lord Street thoroughfare.

For further details please contact: Jean Branch, Ellerslie Court, 38 Westcliffe Road, Southport. Tel: 68545.

EQUIPMENT

Solar 250 Projector

This powerful projector is the hub of a comprehensive effects system. Complete with 250 watt quartz halogen lamp. Power consumption 240 volts, 3 amps. Size: 46 x 29 x 22 cm. Price £170.05.

Bubble Bank

The Bubble Bank creates a myriad of bubbles which stream upwards to about 2 metres over a distance up to 6 metres. Supplied with ½ litre of bubble liquid concentrate and one mixing/dispenser bottle. Power consumption 240 volts - 0.25 amps. Size 43 x 24 x 28 cm. £104.50 Bubble Bank Liquid, ½ litre size £4.95.

Fibre Optic Spray

A fibre optic colour changing projector complete with spray of fibre optics which gives the effect of a cascade of points of light which constantly change colour. 240 volts. Price £249.50.

Bubble Units

See and hear these tubes of constantly rising bubbles, illuminated by a cycle of 4 coloured lights. Red, Green, Blue and Yellow. 240 volts.

Prices:	118cm x 11cm £310.00	168cm x 11cm £315.00
	120cm x 15cm £370.00	175cm x 15cm £410.00
	225cm x 15cm £440.00	175cm x 20cm £525.00
	240cm x 20cm £550.00	

Fibre Optic Board

A random pattern of light points which slowly but constantly change colour. The light points are the ends of fibre optics so the face of the board is free from electricity and is safe to touch. 240 volts. Price £495.00.

Travelling Light Tube

A flexible clear plastic tube containing a system of travelling lights which are operated by the drive unit. The speed of light travel can be varied and the direction reversed. Length 750cm.

Prices:	White Light Tube £53.50	Coloured Light Tube £53.50
	Drive Unit, 240 volts £70.00	

The above items are available from Rompa, P.O. Box 5, Wheatbridge Road, Chesterfield, Derbyshire, S40 2AE. Telephone: 0246 211777.

Commode Cushion

A unique Gell-cell cushion for anti decubitus care. Fits all toilets and commodes. Can be used to reduce toilet seat aperture. Staph-Check cover. Sizes 17" x 17", 16" x 16" (other sizes to order).

Slapstik

Non-slip mat holds plates and cups firmly in place. Available in red, blue or yellow. Choice of four - round 5½" (140mm), or 7½" (190mm), rectangular: 10" x 7" (250mm x 180mm), or 14½" x 10" (360 x 250mm). Prices from £2.52 for 140mm size.

The above items are available from The Helping Hand Company, St. Catherine Street, Gloucester, GL1 2SL. Tel: 0452 500200.

Card Shuffler - Price £11.50 including P&P and VAT.

Card Holder - Price £7.48 including P&P and VAT.
Large Print Cards - Price £5.00 including P&P (£5.75 inc. VAT).
Brailled Cards - Price £5.00 including P&P (£5.75 inc. VAT).

* These Leisure Products are available by post from Medipost Limited, Unit 1, St. Johns Estate, Elder Road, Lees, Oldham, Lancs, OL4 3DZ. Tel: 061 678 0233.

Free Standing Prone Board with table attached, suitable for babies of 10 months onwards. It is easily adjustable for lateral support, and folds very easily for storage.

Available from Taylors Orthopaedics, Compton Works, Woodwards Rd., Pleck Walsall, Staffs.

Camp Rookwood Modular Seating System for children with impaired balance, currently available for children from 2-12 but will be available for older children in about 9 months.

Information from Chris Bar and Nigel Shapcott at Rookwood Hospital, Cardiff.

Displayed in an exhibition by the London College of Furniture, a design for a **therapy chair** for handicapped children with difficulties controlling posture, which swivels and tilts on three axles and is capable of very fine adjustments. Developed by Jutta Tanner, who works as a physiotherapist at the Cheyne Centre in Bromley.

The Ortho-Med Snug Seat has been designed by rehabilitation engineers as a system of seating for younger children with poor postural stability. In some two years of clinical evaluation by practising therapists, the system has proved to be of value in children with minimal skeletal deformities, who have moderate seating problems. The snug seat is designed to promote symmetrical support and is consistent with good orthopaedic management. Optimum posture support is achieved by accurate positioning of a series of modular pads within a childs standard car seat. Each pad is secured with velcro, and by using a sandwich technique the desired degree of support is built up. An adequate supply of various shapes and sizes of pads is provided with each unit. The existing system caters for children up to 18kgs in weight or approximately 4 years of age. A larger version has been developed and will be available in the near future. The Snug Seat is supported in a robust steel frame and may be used free standing on the floor, in an indoor trolley with castors, in the back seat of a car or within a McLarens Buggy. The Snug Seat is designed to look as normal as possible and all support pads are concealed underneath a washable car seat cover. The attractive appearance of the seat tends to belie the truly functional nature of its use.

Manufacturers: Ortho Med Ltd., 5 Loaning Road, Edinburgh EH7 6JE. Tel: 031 652 1603. Contact Mr. Iain Lees or Mr. Jim Ramsey.

Deron designers and manufacturers of microelectronic equipment for severely handicapped people have recently linked up Q.E.D. who are based on the South Coast, and are now agents for each others products.

Examples of some of these products are:

Switches for use with computers, toys, environmental controls-all with standard 1/4" jack plug.

Beach Ball Switch - a novel idea, simply squeeze the ball. Fun for children, particularly suitable for those with little fine control. £38.50.

Touch and Go - Two sensitive touch plates. Both must be touched to make the switch contact. Useful to encourage two handed work. £29.50.

Broken Beam Switch - break a light beam with large or small body movement. £75.

Activity Mat - a large colourful pressure mat. Press, roll or jump on the yellow spots. Good to encourage mobility. £78.50.

The firm also supply a range of toys where the switches simply plug into computer interfaces for the B.B.C., and the environmental control systems to operate mains appliances.

For details of all these products send to: Deron, Unit 8, Foundry Lane, Byker, Newcastle-on-Tyne, NE6 1LH. For free demonstration - Tel: 091 276 0660.

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HAPPENINGS

ELMA BELL our hard working PRO has had a Trust Fund set up in her name by the parents to buy a minibus to transport children for treatment. Elma also had a paper published in the July 1987 Physiotherapy. During her career she has addressed the International Meeting of the Cerebral Palsy Ass. (1978), The American Academy of Cerebral Palsy (1984), The CSP (1986), The APCP Annual Conference and the Irish Paediatric Physiotherapy Association in 1987. She is also a very dedicated teacher of the Halliwick method of swimming.

LYNN HORROCKS the Welsh regional representative successfully completed the Certificate in Management Studies (NHS) last year. This was a day-release course run jointly by the Institute of Higher Education and the Health Service, and is designed to develop practical management skills. The course participants select many of the topics covered and also make a presentation of a short research project on a management topic. Run as a self managed group, the individual work consists of practical workshops, lectures and a research report. As a result of her work she got promotion!

MICHELLE LEE - a member of the Editorial Board has just been appointed to the post of Supt. II of the Portland Hospital for Women and Children, Gt. Portland Street, London. Trained at the London Hospital 1978-81 she has worked in Bath, Gt. Ormond Street, Queen Elizabeth Hospital, Hackney, and as a Community physiotherapist for Newham Health Authority. She has also written a paper on 'Management of Childhood Hysteria' which was published in the CSP Journal in 1982.

MARY CLEGG our Vice Chairman is appearing on the Kilroy programme on B.B.C. 1 on October 15th in a discussion following the showing of the sequel to the film 'Standing up for Joe'. Mary is also very involved with post registration education and is much in demand as a tutor and speaker.

INGER BOGUES, Senior Physiotherapist at the Lancasterian School in Manchester has spoken on local radio, and has also had an article published in the July 1987 issue of 'Health Care' entitled "Easing the Effects of Cerebral Palsy", in which she discusses Conductive Education as it is practised in Hungary, and as it is practised in the Lancasterian School.

PAM EKERSLEY our Post Registration Education officer has had an article published in the July issue of Health Call entitled 'Some very moving Problems' which stresses the importance of training self determination and independence, as well as movement skills, with the wide range of childhood disorders treated by paediatric physiotherapists. She also points out that partnership is the keynote of our service, and joint planning with other colleagues in the Health and Education services.

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THE ROYAL VISIT

by Mrs. V. Williams

HRH the Duchess of York, as new President of Action Research for the Crippled Child, included a visit to the Childrens Centre, during a busy day in Cardiff recently.

The preparation for the visit was most exciting with visits of officials, being vetted, and searches by police and police dogs. It was quite a change from the usual routine to see the Centre full of adults instead of children.

The great day arrived with the Press packed into one end of the room, and Lisa Fflur Owen at the other end of the room with her parents and therapists, waiting to be presented. Lisa was chosen as being typical of the children seen at the Centre. As the moment approached for Her Royal Highness to arrive, excitment mounted and Lisa started crying - her nappy needed changing! Horrifield officials cried 'No, she will have to wait.' The physiotherapist hesitated only a second and then overruled them - 'one must get ones priorities right mustn't one?'

Her Royal Highness looked stunning, wearing a navy gymslip style dress, with an off white jacket, and navy accessories, a glowing healthy complexion and a charming relaxed manner. Her Royal Highness was unperturbed by the deviation from the strict schedule - in fact she enjoyed it and playfully made polite conversation. Nappy changed, Lisa was happy to meet the Duchess and smile for the photographers.

Our excitement of the day was enhanced by the joy on Lisa's face and the natural charming way in which Her Royal Highness interacted with Lisa and her family - model for any paediatric physiotherapist!

Note: Mrs. Williams is Superintendant Physiotherapist at the Childrens Centre of the University Hospital of Wales, and was presented to HRH during the visit.

DO YOU KNOW????

☆ A new 'Journal of British Music Therapy' appeared this Autumn. It will be published bi-annually. Further information: Denize Christophers, 69 Avondale Ave., East Barnet, Herts. EN4 8NB. Tel: 01 368 8879.

☆ A new screeing procedure - "Schedule of Growing Skills" has been developed over the last three years. Devised by Dr. Martin Bellman, Consultant Community Paediatrician at Bloomsbury Health Authority, and Dr. John Cash, Snr. Lecturer in Community Paediatrics and Child Health at The Institute of Child Health, it is a precise technique with well defined criteria. It is based on Dr. Mary Sheridans STYCAR developmental sequences and has been extended to cover other areas, and will be helpful in picking up speech and language problems.

☆ Measles kills more than 2 million children per year, most in underdeveloped countries. In the West the more virulent strains can lead to encephalitis. But now research in Northern Ireland is hoping to clone the measles virus in an attempt to eliminate the disease.

☆ The Asthma Society is opening a new Training Centre in Stratford-on-Avon, to help health professionals keep abreast of information about the disease and its treatment.

☆ Speech Therapists are increasingly concerned by evidence that deprivation and abuse of an individual, may result from a communication handicap. They hope to rouse public awareness of the problems.

☆ It is thought that children with AIDS will form a new category of handicapped children, because they respond differently to the virus, and are more likely than adults to suffer from neurological seizures, paralysis and other brain conditions.

☆ It is thought possible that changes in the pitch of a baby's cry, may indicate impending illness. Research is being undertaken by a Belfast G.P., Dr. John Farrell.

☆ Princess Michael of Kent has become royal Patron of the Prader-Willi Syndrome Association.

☆ Cystic Fibrosis seriously affects the lungs and digestive system of 400 babies born each year. But since the formation of the Cystic Fibrosis Research Trust in 1964, the survival rate to young adulthood, has risen from 12% - 75% but there are still two deaths a week.

☆ An appeal for ASBAH on B.B.C. Lifeline in May raised more than £21,000.

☆ According to statistics 1-10 children across the world is disabled.

☆ A survey has revealed that most children with asthma receive pressurised inhalers, but cannot use them satisfactorily.

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Reports from **HERE AND THERE....**

★ Report "Where are the Children?" calls on the Secretary of State for Social Services to publish a review every three years on all aspects of his/her responsibilities for children, and progress in implementing agreed standards of care.

Available from: NAWCH, Argyle House, 29-31 Euston Road, London NW1 2SD. £4.

★ Mrs. Edwina Currie, Junior Health Minister, announced a £30,000 grant is being made by the DHSS to the Asthma Research Council.

★ Mr. Harry Clayton, Director of the National Deaf Childrens Society, hopes professionals will become aware and sympathetic to the problems of families with a child who has become deaf after a childhood illness. A report has been published by the National Deaf Childrens Society, 45 Hereford Road, London W2 5AH.

★ A local TV news item mentioned a 16 month old baby girl, who developed meningitis, was not correctly diagnosed, and is now left with severe brain damage. Pressure is to be put upon the Government by the Meningitis Trust for Doctors to be made more aware of signs and symptoms of meningitis, which in the early stages can be very similar to colds or flu. The Board of GeneralPractioners suggest that if symptons last more than 24 hours, the child should be seen by a doctor and admitted to hospital for investigation.

Perhaps paediatric physiotherapists should be aware of this.

★ Scientists have reported a breakthrough in the treatment of Clumsy Children, which they claim can effectively cure them in two weeks. It uses a system of behavioural training after the child's problems have been identified, and in a test sample of children has been found 100% successful.

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The Bobath Concept

Miss Gillian Stern wishes to point out that in the transcript of the tape from her live lecture at the York Conference, the following was omitted:

'One big change is our move away from developmental treatment. This used to involve treating the child strictly in accordance with developmental milestones-prone, crawling, kneeling up and finally standing. We discovered by experience that insistence on moving through normal developmental sequences may be detrimental to a CP child's progress, and may in some cases prevent them from ever adopting an extended posture up against gravity.'

(Paragraph 3 p.12. A.P.C.P. Newsletter. Aug. 1987).

REGIONAL REPORTS

South East

Reg. Rep. Miss C. Young, Royal Alexandra Hospital, Brighton.

The South East Region held a Study Day and Workshop in Canterbury, on Saturday October 14th, on "Eating Difficulties in Babies and Children with Neurological Impairment". Speakers included Myra Aleksander and Kay Coombes. The next Study Day will be on Saturday March 5th 1988 in Brighton, on "Development Patterns of the Pre-Term Baby." It will be combined with our A.G.M. Details from Chris Young. The committee tries to rotate the venue of study days within the South East Region, so that all members have the opportunity of participating. We would appreciate more communication from S.E. Region members, in order to arrange study days and meetings that people would particularly like.

We are hoping to find two people to attend the APCP National Conference at Warwick in April 1988: S.E. Region members wishing to apply, should send their name, address and telephone number to Chris Young by November 30th 1987. The draw for this will be made on December 3rd and the successful members notified immediately.

London

Reg. Rep. Miss V. Read, 62 Madeley Road, Ealing, London W5 2LU.

A successful Study Day on "Sport and Recreation for the Disabled Child" was held on Saturday 26th September, when at least 30 physiotherapists gathered at Westminster Childrens Hospital, to hear lectures on varied sporting topics including horse riding, trampolining, Halliwick, games and canoeing.

Our next meeting is on Tuesday November 17th when Pam Eckersley, Post Registration Education Officer for APCP, will give us an update on "The Implications of the 1981 Education Act". This will be held in the Lecture Theatre of The Hospital for Sick Children, Gt. Ormond St., starting at 7 p.m. For further details, please refer to your October Physiotherapy Journal.

Starting in January there will be a series of four evening meetings on counselling, entitled "New Options - how to continue to function at an optimum level and prevent "Burn-Out".

South West

Reg. Rep. Miss G. Riley-Meadows, Bowerchalke, Salisbury, Wilts.

Plans are still in hand for the Study Day to be held in Spring 1988 at Poole General Hospital. The A.G.M. will be held during the day. Details will be publicised when plans have been completed.

A Workshop on the Counselling of parents with a young handicapped child is being considered - this will be held in the Salisbury area. Would anyone who would be interested please contact the regional representative? Further details of this will be publicised in the Regional Newsletter.

North West **Reg. Rep. Lyn Wakley, 2 Ash Bank, Pipers Ash, Chester, CH3 7EH.**

An excellent Study Day on Juvenile Chronic Arthritis was held on Saturday 19 September 1987. It was well attended, and we hope to follow it up next year with practical splinting workshops.

The Sophie Levitt workshop on 21 November is fully booked, and we are looking forward to a very stimulating day. The Committee are at present arranging a "seating" day, to be combined with the A.G.M. in early March. Further details will be available at a future date, we hope as many members as possible will attend.

North East **Reg. Rep. Mrs. E. Barron, 5 Sandy Lane, Ripon, North Yorks HG4 2PD.**

An evening meeting has been arranged for November 18th in York, when Grace Woods will tell us what happened to some of the children she treated 25 years ago.

Unfortunately our day course has had to be postponed until the Spring because of the difficulty in obtaining suitable speakers. We will let you know the date as soon as possible.

Trent **Reg. Rep. New Representative to be appointed.**

There was a meeting on July 21st 1987, when it was suggested that Esther Cotton be made an honorary member of APCP. Main topics were: Conference 1990 Venue/speakers/organisation. Researching: Lincoln, Nottingham, Leicester, Loughbrough areas. The course 'Handicapped Child in Mainstream Schools' has been put back to October due to lack of support. A future course on Scoliosis is planned at St. Georges, Lincoln in early 1988. Suggestions for topics for 1988/89 are needed.

Wales **Reg. Rep. Mrs. L. Horrocks, 9 Garth Close, Rudry, Nr. Caerphilly.**

Our next meeting is a week-end Halliwick Swimming Course on Saturday November 21st/Sunday November 22nd, to be held in conjunction with the Sports Council of Wales, at the National Sports Centre, Sophia Gardens, Cardiff.

On Thursday December 3rd we are pleased to welcome to Wales the research team from Chailey Heritage Sussex with their 'adaptaseat'. They include: Roy Nelham, Tech. Director, Catey Mulcahy OT, Terry Pountney, Physiotherapist, and Geoff Billington Research Technician. This will be a Studay Day for APCP members and a wide audience of professionals concerned with seating for children. The venue will be: The Childrens Centre, University Hospital of Wales, Cardiff. Tel: 0222/755944 ext. 3585.

A three day Bobath Course is to be held on March 1/2/3 1988 entitled - An Introduction to the Treatment of the Mulitply Handicapped Child Cerebral Palsied Child. The venue will be The Combined Training Institute, University Hospital of Wales, Cardiff.

W. Midlands **Reg. Rep. Mrs. C. Dunn, Cockshute Farm, Wichenford, Worcester.**

An Educational Forum was held on June 6th 1987 at Chadsgrove School, to discuss the implications of the 1981 Education Act. The panel included an Educational Psychologist in Special Education, a worker in Special Education in normal schools, and the Headmaster of a Special School. On October 3rd 1987 Solihull hosted a highly successful Bobath Day. Forty physiotherapists attended the course which included theory of treatment and practical demonstrations.

Scotland **Reg. Rep. Mrs. E. Breckenridge, 19 Langside Drive, Newlands, Glasgow.**

The Scottish Branch are organising a workshop on 'Seating for Children' on Saturday December 5th 1987, at the Royal Hospital for Sick Children, Sciennes Rd., Edinburgh.

Based on experience gained in Dundee, Tayside, a series of presentations will describe assessment techniques, followed by a review of the full range of seating systems for meeting the requirements of disabled children. Guidelines on clinical applications and prescription criteria will be included, along with practical demonstrations of a selected number of systems. Presentation will be made by Elizabeth Fairgrieve OT Margaret Hannan, Rehab Engineer, Alison Smith OT and Jeff Bardsley, Rehab Engineer.

The fee will be £15 members - £17 non-members. Applications with s.a.e. to Miss L. Campbell, Supt. Physio, Westerlea School, 11 Ellersley Rd., Edinburgh EH12 6HY. Tel: 031-337-1236.

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COURSE DIARY

January 22-24 1988.
Dance - Drama Dynamics.

A week-end course to develop awareness and creativity skills which can be used with those who experience sensory, intellectual or social handicap. Led by Wolfgang Strang, Tuition £50, Residence £47, Non-Residence £17. Further information: Castle Priory College, Wallingford, Oxford.

University of London Institute of Education
Director: Professor Denis Lawton, BA, PhD

The 1981 Education Act: Research Dissemination and Management Development Project
18 Woburn Square, London WC1H 0NS
Telephone: 01-636 1500 Ext: 297, 298. Direct Line: 01-580 2581
This project operates in collaboration with the National Children's Bureau, 8 Wakley St., London EU1U 7QE

Project Leaders
Dr. John Welton
Dr. Brahm Norwich

Project Consultants
Dr. Ron Davie: National Children's Bureau
Prof. Klaus Wedell
Dr. Bertie Everard: formerly with ICI

4th August, 1987

Dear Colleague,

Ref. **Decision-making for Special Educational Needs. The 1981 Education Act: Research Dissemination and Management Development Project**

The project receives many requests for information about what education, social services and health authorities are doing in the field of special needs. It seems that administrators and practitioners are keen to learn from each other and to swap ideas.

We are attempting to compile a data-base of good practice and innovation in the field of providing for children with special educational needs, so that we can put interested parties in touch with each other and to provide a forum for discussion and debate.

If you have any interesting developments in special needs in your area, and would like to share them with others, would you please give brief details on the enclosed forms. People are particularly interested in:

(1) Integration schemes;
(2) Parental involvement;
(3) Links between ordinary and special schools;
(4) Computerisation of the statutory assessment procedures;
(5) Computerisation of record-keeping;
(6) Advocacy schemes;
(7) Voluntary organisations concerned with the Act;
(8) Joint planning between education, health and social services;
(9) Training;
(10) Help for pre-school children (Portage of similar schemes);
(11) Booklets for parents;
(12) Efficient statutory assessment procedures.

This list is intended to give an idea of the range of requests we get, but is not exhaustive. If you have any examples which do not fit into this list, do not let that stop you from telling us about them.

I enclose a form for your use. Please photocopy

Thank you in advance for your help. I am sure that investing some time in helping us to set up the data-base will be of benefit to all those concerned with the dissemination of good practice in the field of special educational needs.

Yours sincerely,

Jennifer Evans.

Jennifer M. Evans
Senior Development Officer

University of London Institute of Education, Data Base of Innovation/Good Practice in the field of Special Education needs.

Initiated by .....

Where? .....

Description of Innovation .....

Contact - Name

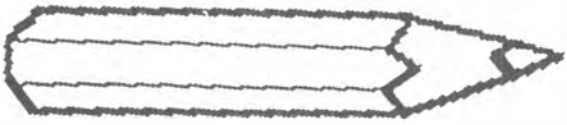
Address .....

Telephone No .....

References .....

Please return to: 1981 Act Project, 18 Woburn Square, London WC1H 0NS.

HANDWRITING INTEREST GROUP



LONDON SEMINARS 1988

in

University of London

INSTITUTE OF EDUCATION

20 Bedford Way, London WC1H 0AL

Department of Educational Psychology and Special Educational Needs

5.30 - 7.30 p.m.

(Plenty of time for discussion)

Course Organiser: Jane Taylor - formerly Helen Arkell Dyslexia Centre
Dr. Sheila Henderson - Research Lecturer in EPSEN

The focus of these three seminars will be the special needs of children with handwriting difficulties.

Thursday 28th January	**Handwriting - Primary Practice** Mary Britt. Deputy Head, Holbeach Primary School, London.
Thursday 25th February	**Analysing Handwriting Difficulties** Dr. Sheila Henderson Research Lecturer, Institute of Education.
Thursday 24th March	**Can intervention programmes be fun?** Jane Taylor Dip. COT., Dip. Ed.

Admission charge for each seminar will be £4.00 payable at the door.

Free coffee and biscuits will be available from 5.00 p.m.

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