ASSOCIATION OF

PAEDIATRIC

CHARTERED PHYSIOTHERAPISTS

NEWSLETTER

Association of Paediatric Chartered Physiotherapists

Newsletter No. 47 **May 1988**

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EDITORIAL

IN SEARCH PAPERS

Physiotherapists have justly deserved their reputation for being practical people, getting on with the job and making a difference. That they are also thinkers and constantly adding to their personal and unique store of knowledge by observation, practice and discussion, is not so widely recognised. Working with children where there are always the variables of age, circumstance and family to be taken into account, this combination of thought and practice is a pre-requisite for success.

The profession has been urging its members to initiate and take part in research for some years, and rightly so, as there is a need to qualify and quantify our practice.

We propose to open this Newsletter to IN SEARCH papers, short articles presented as discussion documents. They may be records of successful practice; particular aspects of interest to the author, new inventions. But each article must be presented in a critical and conclusive manner, answering questions "Why has, or does this work?" "How am I able to recognise its success?" "What is different or new about this procedure or device?"

Members should not be deterred from going to print! The Newsletter is not a scientific journal, but copies are kept at the British Library. By offering material for discussion through its pages, interest may be polarised and further in depth research result, with benefit to us all.

Put pen to paper and contribute to a novel and, destined to be a fascinating edition to our Newsletter. Articles may vary between 500-2000 words and should be sent to IN SEARCH, c/o The Editor etc.

Have confidence in your own success and ability to observe and evaluate!

N. Hare

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The last date for submission of material for the AUGUST 1988 Newsletter will be JULY 5th. This is the Conference edition.

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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.

LOCOMOTION BIOMECHANICS - IT'S NOT THAT DIFFICULT!

Dr. C. B. Meadows, Deputy Director, Bioengineering Centre, Princess Margaret Rose Orthopaedic Hospital, Edinburgh.

At last year's APCP Conference in York I gave a lecture on "The biomechanical aspects of cerebral palsy". As a consequence of this I have been asked to write an article for the Newsletter on the mechanical aspects of gait.

From time to time I get the opportunity to talk to physiotherapists on this subject and as soon as I get to the point of talking about the biomechanical theory I can sense the shutters coming down in about 90% of the audience. I think the trouble is that most people imagine they are going to need at least a Ph.D. in applied physics to understand what I am about to describe and they remember that they weren't very good at maths and physics at school anyway. What's more, for some, that was quite a long time ago! However I like to think that by the end of my talk there are at least a few more physios who understand the basic theory and realise that knowledge of biomechanics is potentially useful to them. So if you're a member of the silent majority who are feeling put off by now and are thinking of flicking on to the next article in this Newsletter - please read on!

Why - you may well ask - should you bother learning about locomotion biomechanics? After all you can walk perfectly well and you didn't have to learn the theory first. And what's more, most of your patients who have walking problems seem to be better off as a result of your physio treatment. Well I think we would all agree that perhaps we could do a little better, to our patients advantage. Do we really understand **everything** about a particular patient's problem? Are we using the most appropriate form of treatment? What effect is the treatment having anyway? This is particularly so when the pathology is complex - cerebral palsy for example. My own feeling is that understanding some basic locomotion theory, and following on from that, some knowledge of pathological locomotion, can help to clarify an otherwise complex and confused situation. It gives us a toe in the door of understanding.

I am sure that none of us would argue that for some patients with biochemical problems, knowledge of biochemistry and its application to the understanding of the problems is rather fundamental if we are going to help them in any way. Now I don't understand anything about biochemistry but I imagine that all the appropriate biochemical reactions are taking place inside me regardless of my ignorance, for which I am truly thankful. However if anything goes wrong I hope that the person who comes to mend my body by fiddling with my internal biochemistry knows a bit about it.

So too with biomechanics - it's happening all the time. Granted its presence is perhaps not yet as accepted as biochemistry - but it's there all right. I feel that we ought to start taking a bit more notice of it!

Let's look at normal locomotion theory first and then we'll look at a little abnormal biomechanics just to whet your appetite. This is best done by looking at the diagrams but before you do this let me make a few points first.

I am sure that you are all well aware of the concept of your centre of gravity and that because of gravity your body weight acts downwards through your

feet and onto the ground. Now, because of a basic natural law of mechanics, to which any object on this planet is subjected, there is an equal and opposite force acting up from the ground and onto your feet.

I imagine that you are probably sitting down reading this Newsletter. Well your body weight is acting downwards on the seat. The poor old seat is having to push upwards equally to keep you there - just as well really.

It's just the same when you are standing. Now it turns out that to understand locomotion it is more use to consider this upwardly acting "ground-to-foot force". You can forget about the one acting downwards in the meantime. When you are standing still this force acts vertically upwards. However, when you are actually walking the force is not always exactly vertical. In fact it leans backwards a little and then swings through vertical to leaning forwards a little as we go through the stance phase of gait from heel strike to toe off. Now look at the diagrams on locomotion biomechanics and see what the consequence of all this is.

Well, it's not really all that complicated. As you will have seen the mathematics involved is rather simple. About the only word which in this context is new to you is "moment" which is the name that engineers give to a turning force, which tends to make a joint flex or extend. If you find this concept a bit hard to grasp try tying a long piece of string onto your shoe at the instep. Balance on the other leg standing on a book to let your unloaded leg swing loosely. Align the string just behind your knee and pull it upwards. If you are relaxed enough your foot will probably dorsiflex and your knee will flex. To stop them moving you need to contract your plantarflexors and your knee extensors. What you have simulated with the string is a "ground-to-foot force" which has generated moments at your ankle and knee. Now I know that it's not **exactly** the same as when your foot is stuck on the ground during locomotion but you'll need to trust me that it's almost the same.

As can be seen from the diagrams the magnitude of the external moment depends on both the size of the ground-to-foot force and its alignment relative to the joints. Thus a small force aligned closely to the joints generates a low moment which the muscles find easy to balance. However, if the force is high, for instance if you land heavily on your foot, or if the force is aligned far from the joints (try walking with your knees excessively flexed) the moments are very high and thus the demand on the neuromuscular system is also high.

Hopefully by now you will appreciate the concept of the external moments caused by the ground-to-foot force and the fact that if we are to walk instead of collapsing or falling over our neuromuscular system will need to get its act together and generate internal moments to balance these. Most of the time it manages this and does so at a subconscious level unless for some reason we are temporarily incapacitated. People with faulty neuromuscular systems or structural abnormalities may find it difficult or even impossible to carry out this complex balancing act. They may, however, be able to adopt some cunning biomechanical manoeuvre to avoid the problem and get round it somehow. Old polio patients are often experts at this as are some patients with cerebral palsy, or those with painful hips for example.

If we can determine the biomechanical aspects of a particular patient's problem and add this information to our other clinical knowledge we may be

When standing still body weight acts vertically downwards.

To balance this there exists an equal and opposite force acting vertically upwards - the "ground-to-foot force".

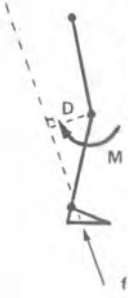
When walking, horizontal shear forces are generated between feet and ground either forwards or backwards.

When vertical and horizontal forces are added together resultant force vector leans away from vertical, either forwards or backwards.

If the force vector, f, passes a distance, d from a joint an external moment, m, is generated tending to make the joint flex or extend. In this example the knee will tend to flex.

$$m = f \times d$$

To balance this, muscles must produce equal and opposite internal moments at the joints, in this example the knee extensors. Note also that the external moment at the hip will tend to cause extension and at the ankle dorsiflexion.



The moments generated depend on the magnitude of the force, f, and the perpendicular distance, d. Thus if this distance is large the moment generated will be high.

$$M = f \times D$$

Similarly if the ground-to-foot is large the moment will again be high.

$$M = F \times d$$

able to prescribe treatment which is more pertinent. This could be either physiotherapy, orthotics, chemotherapy or surgery, for example, or a subtle combination of these. This may reduce the necessity for the patient to accomplish biomechanical acrobatics in order to get around safely and without an undue drain on their energy reserves. Even more exciting is the possibility that we may permit somebody to get on their feet and walk, who previously couldn't do so, and in an acceptable manner.

To finish up with take a look at the stick diagrams A, B and C. These have been drawn slightly differently from the "basic theory" ones inasmuch as the arrow representing the ground-to-foot force have been drawn starting at the foot, otherwise they are the same. This information was obtained using a modern gait analysis laboratory with markers positioned appropriately on the child's leg. Although the child's foot is really in the same position on the floor and not moving, each sample has been drawn slightly further across the page to make interpretation easier. The computer system usually plots these in different colours so that you can see clearly which force "arrow" goes with which "stick leg". In black and white you may need to count the forces and legs starting from the left to determine which arrow goes with which leg! The size of the arrow is proportional to the magnitude of the force. If the child was standing still on one leg the arrow would just reach the "body weight" line. However, because of the dynamic nature of gait, the magnitude of the force varies throughout the stance phase.

Quite a lot can be learned from these diagrams but I'll list just a few key points.

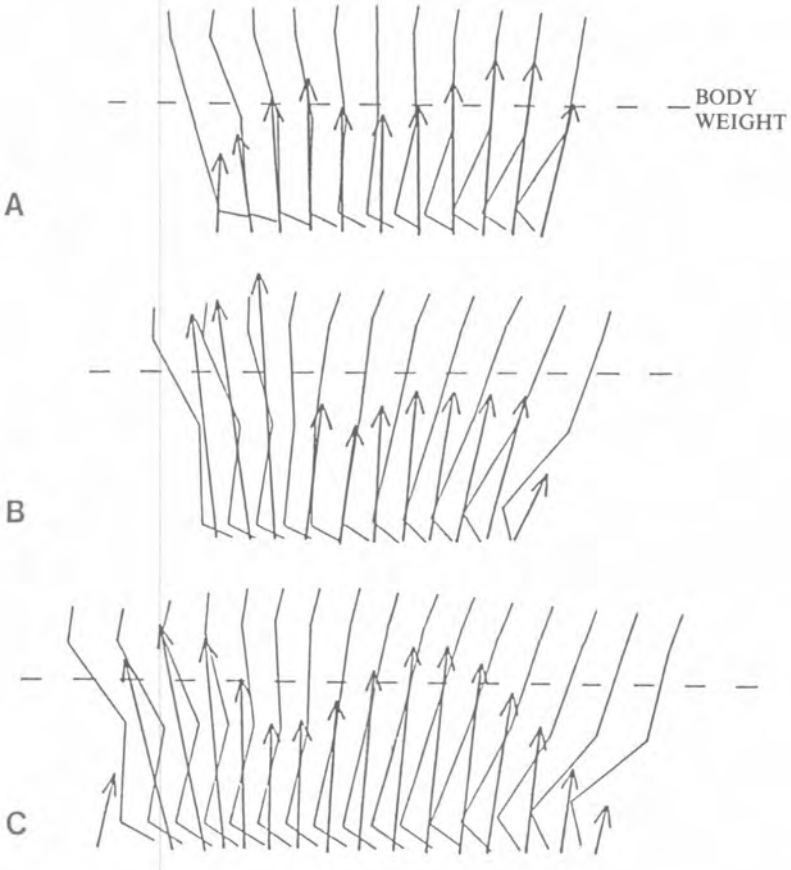
Diagram A

This normal child is obtaining heel strike (the first few arrows are drawn starting at the rear of the foot). The magnitude of the ground-to-foot force rises to just above body weight, falls just below in mid stance and rises to just above body weight during "push-off". This is classically normal. Note in particular the close alignment of the force to the joints of the leg, particularly the knee and hip in late stance. The external moments are therefore low as in the demand on the neuromuscular system. In other words walking feels quite easy.

Diagram B

In this case the CP child is toe-walking and is landing very heavily on her foot - look how big the force is. In late stance the ground-to-foot force is less than body weight. (In this case this means that she was actually in the process of falling down in late stance and hence the huge impact forces when she lands on her next foot - and so on!).

Her knee is being forced into hyperextension - look for the fifth leg and arrow from the left. The force is aligned well in front of the knee causing a large external extension moment. This of course is a fairly common CP gait problem. Note that the force generally is aligned some distance from all the joints in this case. Thus the external moments are large and hence there is a high demand on the neuromuscular system. In other words walking is difficult.



Stick and Force Vector Diagrams

A - Normal child walking barefoot.
B - Diplegic CP child walking barefoot.
C - Diplegic CP child walking with bilateral AFOs, Piedro bootees and rocker soles.

(Note - line representing foot is drawn between markers placed on lateral maleolus and fifth metatarsal head).

Diagram C

This is the same child with what was considered clinically to be an appropriate orthotic prescription. She is now achieving heel strike. She no longer hyperextends her knees. The AFO and rocker sole have improved the alignment of the force with the knee. (It now passes behind the knee). The high impact forces at heel strike have disappeared and she is now able not only to support her body weight but is also able to generate a good push-off force in late stance phase. This indicates that she is now no longer falling down and can therefore walk more slowly and well controlled. (This, interestingly enough, turns out to be due to a more favourable alignment of the ground-to-foot force to the hip joint in late stance!). It is perhaps difficult to see clearly, but the external moments at all the joints have been favourably reduced also. Walking is therefore less demanding and easier to control opening up scope for further learned improvement.

These examples were obtained when we looked at one aspect of patient management, the use of orthoses with CP children. We could have looked at other forms of management, physiotherapy for example. Are the biomechanical effects similar? There have got to be some changes if the child's gait is altered in any way. What are the effects of other aspects of treatment? Hopefully some day we may have some of the answers to these questions.

Conclusion

I hope that if you have managed to make it through to this point in the article you will agree that locomotion biomechanics is not really that difficult in itself and that a working knowledge of it is a useful clinical tool. Admittedly the application of locomotion biomechanics to certain clinical problems **can be** complicated but this is largely a reflection of the complexity of the natural process of locomotion and the additional complications of the pathology. Trying to pretend it isn't will not help our patients. Getting to grips with the fundamental biomechanics of the situation will, I believe, in many instances help to unlock the secret of successful treatment.

However, if any of you still remain somewhat less convinced than I am on this subject you may take some solace from the following quotation which I seem to remember from somewhere:

"To teach a centipede the theory of locomotion is merely to make him stumble".

Acknowledgements

The locomotion data described above resulted from a research programme "An investigation into the mobility of the cerebral palsied child" funded by the Scottish Home and Health Department. This was carried out while I was employed as a rehabilitation engineer with Tayside Rehabilitation Engineering Services, Dundee, in conjunction with my colleagues Mrs. L. M. Duncan, orthotist and Mr. D. M. Anderson, superintendent physiotherapist.

THE DIPLEGIC - THE BOBATH APPROACH TO GAIT ASSESSMENT, AND ITS RELATIONSHIP TO TREATMENT PLANNING

Gillian Stern, Senior Physiotherapist. The Bobath Centre, London.

To understand walking in its complexity, it may be useful to analyse normal gait in a simplified manner. At the Bobath Centre this is done in terms of patterns of posture and movement, not purely in terms of muscle and joint range. A wide base is used by infants when they start to walk. This gives stability but makes weight transfer and rotation between shoulders and pelvis difficult. It is also uneconomical in terms of effort. As trunk balance improves in standing and walking, the amount of abduction needed decreases, at this time trunk rotation increases, and dissociation of legs from arms, and one leg from the other becomes possible. It is the ability to dissociate one part of the body from another that allows economical movement to occur.

With rotation between shoulders and pelvis, the pattern of movement in the legs is one of a combination of flexion and extension, with external rotation and some abduction.

The size of base of support used for standing and walking varies from individual to individual, but the optimum is one which gives adequate stability plus mobility for minimum energy expenditure. Step length is related to base of support and is also variable.

Factors influencing step length

1. Ability to balance on one leg.
2. Dissociation of one leg from the other -
   a) amount of trunk rotation
   b) length of adductors, internal rotators, hip and knee flexors.

Phases of standing and walking

1. Stance.
   a) Stride standing.
   Weightbearing on two legs in the same coronal plane, legs almost fully extended at hips and knees.
   b) Step standing.
   Weightbearing on two legs, one in front of the other; back leg extended at the hip, hip flexion of forward leg dissociating from the other.
2. Push Off.
   Transfer of weight from the back leg to the forward leg initiated by plantarflexors of back leg, involving active extension of back hip to active extension of forward hip, maintaining dissociation.
3. Swing.
   Maintenance of weight, and ability to balance on an extending hip and knee whilst stepping through with the other leg.

   Stride and step standing are two separate phases of stance. Stride standing is mainly used on commencement of standing, or coming to a halt when walking. Step standing is used whilst walking. To get from

stride stand to step stand requires sideways shift of weight followed by swing phase.

Why has emphasis been placed on activity and patterns of movement at the hips, with little mention of the knees and ankles or feet? Because this analysis of normal gait patterns will be applied to the child with abnormal gait. Due to abnormal tonus quality (spasticity) the diplegic child is unable to use isolated normal movements, only abnormal mass patterns of movement. Thus the complex intricacies of individual joint range and muscle action during each step are largely irrelevant to us. The main requirement is the breakdown of normal gait into its most basic proximal patterns. With these patterns established, the task is to analyse which part or parts of the sequence are faulty, inadequate or missing in the diplegic patient.

It is important to realise that gait analysis on this basis is purely subjective. If reassessment is to be done or research carried out, accurate written records must be kept, in addition to film recordings or videotapes. Although we recognise that each child and his problems are different, with treatment varying accordingly, it may be helpful to examine two of the most typical gait patterns in the walking diplegic.

a) Excessive cocontraction proximally

This child has increased basic tone in a typical pattern of semiflexion at hips and knees, with adduction and internal rotation of both legs: i.e. both flexor and extensor spasticity occur simultaneously. There is often strong plantarflexion of both feet, reinforcing the pattern of extensor spasticity to keep the child up against gravity. His pelvis is held in an increased forward tilt, with an increased lumbar lordosis. Due to the excessive contraction of hip flexors, abdominals, lumbar spine extensors, there is little mobility of the pelvis against the spine, or pelvis against legs.

When walking he does so with excessive flexion at hips and knees. This is reinforced by further flexion of hips and trunk to overcome the backward force caused by the plantarflexion. Due to mass patterns produced by the spasticity, he has difficulty separating (dissociating) one leg from the other, thus taking very small steps. The small steps result in a very small base which, combined with his poor balance reactions in standing, make balancing on one leg whilst moving the other, i.e. the swing phase, extremely difficult. Therefore, because he cannot stand on either leg for long, he walks very quickly.

To aid momentum, and the initiation of each step, he overuses his trunk and shoulders in a forward and backward movement. Constant use of this compensatory pattern of flexion in the upper trunk will result in stiffness in protraction around the shoulders, which has a deleterious effect on hand function.

b) Poor proximal cocontraction

This child has some spasticity in the hip flexors, but poor cocontraction around his pelvis; his abdominals and lumbar spine extensors do not work together to stabilise the pelvis. The inadequate cocontraction causes the pelvis

to 'hang' at the extreme of range. There is thus an excessive lumbar lordosis. He walks with semiflexed hips, hyperextended knees and plantarflexion of his feet; the hyperextended knees and foot plantarflexion being partly a voluntary attempt to increase his hip extension against gravity.

To aid his transfer of weight and momentum, he overuses his upper trunk and arms in a compensatory side to side movement. This movement shifts his centre of gravity well outside his base, and serves to aggravate his already precarious balance. Thus like the previous child, he will also take quick steps. The size of step will depend on the amount (degree) of hip flexor spasticity.

Distribution of tone in both types of child will be asymmetrical. This is because the lesion is generally asymmetrical and will thus affect the two sides of the body differently. Therefore the problems shown and the appropriate treatment, will vary from one side to the other. There may be increased flexor tonus on one side with or without twisting back (retraction) of the hip on that side. The most common problem caused by asymmetry is that of preference for weight - bearing on one leg. This leads to difficulties in weight transferences to the other side, uneven step length, and reinforcement of the abnormal patterns on the non-preferred side.

In conjunction with assessment of the child's gait, it is important to find out his abilities and inabilities on a functional level. We must qualify what he can do, describing how he moves.

Can he, and how does he:

Get up to stand from the floor or using a piece of furniture?
Stand and balance on one leg, which one and for how long?
Stand on one leg and move the other?
Step stand? How big a step?
Take steps to follow-forwards, sideways or backwards?
Take even steps?
Walk around or over obstacles?
Walk backwards?
Walk up/down stairs, aided or unaided?
Stop on command?

If he cannot do some of these activities, why not?

To elicit possible limiting factors such as abnormally high or low postural tone, stiffness or contractures, the child should also be examined in supine and prone. When fully supported, pelvic mobility is checked passively; that is mobility of pelvis against lumbar spine, and pelvis against legs. This will be dependent on tightness of lumbar spine extensors, hip flexors (ilio-psoas), hamstrings and quadriceps. In addition full abduction and external rotation will be limited by tight adductors and internal rotators. These should be checked with extended hips and knees, as well as with flexed hips and knees, to ensure full elongation is achieved. Movements should be done slowly, since a child with spasticity takes longer to adjust to being handled than a child with none.

Another consideration is the effect of walking aids on the child who can only walk with such aid. There are two main effects:

a) Using the relatively unaffected arms, obviates the need for the child to work round the pelvis or legs, preventing the development of balance reactions in these areas.

b) The child overuses his arms, shoulder girdle and upper trunk to support his weight. He presses down on to the tripods or rollator using excessive flexion, which increases the abnormal flexor pattern in his trunk and legs. In time, this abnormal pattern will deteriorate, and the child may be unable to continue to walk, even with aid.

Thus we may be faced with a dilemma. Should we allow a diplegic to use or continue to use a walker, or not?

Factors to be taken into consideration

1. Is the child dependent on the walking aid for independent mobility?
2. Is there a likelihood of independent walking within the forseeable future?

Since aided walking is not the diplegic child's only means of mobility, it may be possible to replace or intersperse the poor walking pattern with tricycle riding. Prevention is better than cure - it is always easier not to give a child a walking aid, than to remove one once given.

Assessment of gait in the diplegic patient plays an important role in the analysis of his problems. It is, however, inadequate to simply record HOW he walks, unless it is related to WHY he walks abnormally. The 'reasons why' are the child's main problems. With these we can evolve aims of treatment, and provide treatment specific to the child's problems. As we treat we constantly reassess-tonus quality, movement patterns, functional ability, and adjust our treatment accordingly.

In conclusion, these patients are walkers. Our main goals in treatment are - to improve their patterns of walking when younger, and prevent deterioration during adolescence. A more normal pattern, requiring less effort will mean that they will function better in everyday life. They will be able to walk further, continue to use their hands skilfully, and stay up on their feet during their growing years.

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THE HIP GUIDANCE ORTHOSIS CENTRE AT QUEEN MARY'S HOSPITAL FOR CHILDREN, CARSHALTON

Miss Ginny Wisbey, Sr. Physiotherapist, Spina Bifida Unit

The Hip Guidance Orthosis (H.G.O.) has been designed and made at the Orthotic Research and Locomotor Assessment Unit (ORLAU) at the Robert Jones and Agnes Hunt Orthopaedic Hospital in Oswestry. The H.G.O. enables the paraplegic user to achieve a reciprocal gait at a lower energy cost than conventional calipers, and is also easier to doff and don.

Our experience with the H.G.O. at Queen Mary's Hospital will be detailed in this article, which may not be representative of other centres. The mechanics of the orthosis has been left to other authors to describe.

The H.G.O. Centre at Queen Mary's Hospital is for children only, and as the hospital is a regional Centre for the treatment of Spina Bifida, they form the bulk of our H.G.O. users. Other conditions which can be treated with the H.G.O. include traumatic paraplegia (which forms the largest group of adult users), cerebral palsy and spinal cord tumours. The highest level that can be supplied is T1, although these patients may find walking quite tiring.

The Centre was set up in May 1987 as the result of a direct approach being made to ORLAU to become a centre for the assessment and supply of the H.G.O. A team was sent to ORLAU to train in the assessment, measuring, fitting and gait education of the new orthosis. Our team consists of a Consultant Orthopaedic Surgeon (who is the team leader and prescribing physician), a physiotherapist, an orthotist and an orthotic technician.

Referrals are taken from other hospitals. An orthopaedic referral is needed to our team leader and the necessary financial arrangements made. (An H.G.O. costs £1,100, about the same price as a double pelvic band set of conventional calipers).

Each patient is assessed by the team leader and physiotherapist, following a list of clinical criteria. With the patient adequately undressed, the hips, knees and feet are examined and any contractures noted. Maximum height and weight is not laid down, but care must be taken with patients over 75kg (12 stone).

Up to 20° of fixed flexion deformity at the hip can be accommodated; any more would interfere with the movement of the orthotic hip joint. Abduction, adduction, internal and external rotation are not usually a problem, as long as free movement of the hip is not impaired.

Fixed flexion deformities at the knee of up to 20° can be accommodated. Deformities of more than 20° result in high interface pressure at the knee, which could lead to damage in anaesthetic skin. Fixed valgus of more than 15° is a problem, as the orthosis would have feet placed very wide apart. There would also be high interface pressure on the medial aspect of the knee.

Feet should dorsiflex to 90° and the sole of the foot should be in contact with the sole of the boot. Wedges built onto the footplate of the H.G.O. can ensure that the foot makes contact with the boot, where there is fixed equinus or calcaneous. Varus or valgus deformities at the ankle can be controlled by means of T-straps attached to the H.G.O.

Any curvature of the spine is noted; shoulders should be over hips and head over pelvis. If the patient collapses into scoliosis, causing the spine to 'concertina', then a spinal jacket can be used to prevent this. The spinal jacket may not be needed on medical grounds, but purely to enable the H.G.O. to be fitted. In this case the spinal jacket is supplied before the H.G.O. is measured for, and the orthosis fitted over the top of the jacket.

Arm strength should be equal and latissimus dorsi intact, as the H.G.O. relies for its function on the use of walking aids - (rollator/crutches). To test for active latissimus dorsi, the patient is asked to lift their bottom off the surface on which they are sitting.

The patient must be motivated and have the necessary intelligence to use the orthosis. The parents must also be motivated for their child to walk and willing to spend time at home helping them to gain full independence in their H.G.O. However, the H.G.O. should not be supplied just because the parents want their child to walk; each individual needs to be carefully assessed. We have devised our own assessment form at Queen Mary's which is specific to the type of patient that we see, i.e. children with spina bifida. A record is kept of any contractures, their weight and height and level of independence. We hope to show how the H.G.O. improves walking ability, if at all, and if it enables children with spina bifida to be more mobile and not to take to their wheelchairs at an early age. There are other possible beneficial physiological effects to bear in mind - improved kidney drainage and bowel function, increased bone growth and prevention of osteoporosis.

The orthotist and physiotherapist measure the patient together. A lot of time is spent measuring and more measurements are taken than for conventional calipers, as the H.G.O. needs to be very close fitting. It is important to get the leg lengths correct, and the orthotic hip joint should align with the anatomical hip joint. Any difference in leg length is built up on the footplate of the orthosis, and not the boot as with other calipers. The patients' own shoes can be worn with the H.G.O. providing that they have the same heel height; otherwise the anatomical and orthotic joints would be out of alignment. (The height of the heel can be built up by an extra sole on the shoe, or heel pads inside the shoe if the discrepency is small).

The H.G.O. is fitted by the physiotherapist and orthotist, when it is only part finished. It is important at this stage to check hip joint alignment. Wrong alignment may: prevent free movement of the hip joints; result in high interface pressures; cause relative movement between patient and orthosis, all of which can cause skin damage and pressure sores. The side members of the H.G.O. should not be in such close contact with the skin so as to cause pressure: and the top of the side members should not be so high as to be uncomfortable under the arm when the patient sits down.

After the H.G.O. has been supplied, the patient attends the physiotherapy department for one to two days walking training. We feel that walking training is a vital part of H.G.O. provision, and both the patient and orthosis are reviewed at regular intervals. The H.G.O. needs to have a mechanical inspection and service every six months. The orthosis can accommodate a certain amount of longitudinal growth.

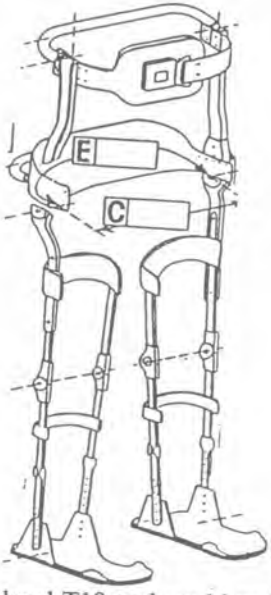
The community or school physiotherapist involved with the patient has an important role, and is invited to attend the walking training, so this can be continued at home/school. In the classroom, the patient must have the correct height of chair to enable the knee release bar at the back of the knee to unlock the knee joint. After backing onto a chair, the patient unlocks the hip joints, and as the knee release bar makes contact with the seat of the chair, the knee joints automatically unlock, and the patient sits down. We aim to have the patient walking independently with a rollator/crutches in the classroom/home, and be able to sit down and get up from a chair. Patients who have used conventional calipers or swivel walkers will have to learn a different gait, although they pick it up very quickly. No special training is needed beforehand.

There are three components to H.G.O. gait - transfer of weight to one leg, bringing the swing leg forward, and re-positioning of the walking aid. The patient transfers weight sideways onto one leg, by pushing down on one hand and leaning on the side member of the orthosis. This lifts one leg off the ground, and to bring this leg forwards, the patient must extend at the hips by using latissimus dorsi with reversed origin to insertion.

After each step, the walking aid is repositioned; with each successive step momentum is gathered and the effort required in subsequent steps is considerably reduced.

As the patient learns how to walk with their H.G.O., we haven't found that they will adapt and "do their own thing!" They are also taught how to stand up from sitting and sit down, get up from the floor, walk up and down slopes, perhaps manage a small step and how to doff and don their H.G.O. The parents are shown how to deal with their childs' new orthosis once they get home.

At the moment six children are using the H.G.O. and five more are being supplied.



David has spina bifida of level T10 and could walk in conventional calipers in parallel bars only and with a great deal of effort. He needed a lot of help to walk using a rollator. He is overweight and had outgrown his calipers with sudden weight gain last year. He was on the verge of going off his feet and becoming wheelchair bound. He is not very bright and had poor motivation, although he did enjoy being upright. His parents were also not very motivated and notorious non-attenders of clinic appointments.

However, it was felt that it was worth trying David in an H.G.O. although at first he did not seem to be a suitable candidate. The treatment programme was explained to his parents, who were keen to try him in the new orthosis. They never missed an appointment to measure, fit and supply David with his H.G.O.!

David is now walking independently with a rollator, after three weeks at his H.G.O. He can walk indoors and outdoors at home, and his school physiotherapist is working on him walking at school and hopes to get him sitting in an ordinary chair at a table with the rest of his class. He is now more motivated to walk and wants to wear his H.G.O. most of the day. He is more outgoing and confident, and is beginning to explore outside his own personal space.

We are all very pleased with Davids' progress, and hope to enable others to achieve this level of mobility with the H.G.O.

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A BRIEF DISCUSSION OF RECIPROCAL WALKING AIDS

Mrs. N. Herbert, Senior I Physiotherapist, Ysgol Erw'r Delyn, St. Cyres Road, Penarth, South Wales.

The importance of standing/ambulation for children with spina bifida or spinal cord injuries is widely recognised. Until recent years the only means of providing ambulation for these patients has been by use of bilateral calipers ('full-set') or long leg calipers and spinal jacket. Reciprocal gait can be achieved with long leg calipers, but is seldom achieved by patients with lesions above T12 due to slow progression and high energy costs. With bilateral calipers, the hip locks must be locked for walking and therefore limit the range of flexion/extension.

There are now, however, two alternative orthoses available, both of which provide reciprocal gait ambulation with low energy costs.

A) Hip Guidance Orthosis (HGO)

Developed and researched at O.R.L.A.U., Robert Jones and Agnes Hunt Orthopaedic Hospital, Oswestry, Shropshire.

The essential features of this orthosis are:

1. A rigid body brace which helps maintain the relative abduction of the legs during the swing phase of the gait cycle.
2. A hip joint with a limited flexion/extension range and friction free operation.
3. Stabilization of knees and ankles.
4. Shoe plate incorporating a rocker sole.
5. Simple fastenings to ease application and removal.

The current design uses an aluminium alloy tubular and channel section body brace to provide a lightweight rigid structure.

a. Chest support provided by leather strap with seat-belt fastening.
b. Buttock support provided by polypropylene band attached to bearing housing.
c. Knee held in extension by simple latched padded strap, and posterior thigh band and vertical extension on shoe plate.
d. Foot and shoe held in place by simple latched pad - user may wear normal footwear.
e. Knee and Hip joints provided to facilitate sitting.

Ambulation is achieved thus by use of rollator/crutches. The patient uses his crutch to clear the swing leg, by tilting sideways. As soon as the swing leg clears the ground, gravity causes it to flex through a pendulum action due to the design of the hip joint. The patient then provides energy through the same crutch using latissimus dorsi to draw the trunk to the arm held stantionary by the grounded crutch, and therefore the stance leg is driven into extension.

The HGO can accommodate many of the common deformities of spina bifida including leg length discrepancy, up to 15° knee flexion (more may be accommodated by building some flexion into the orthosis), and scoliosis.

B) Reciprocating Gait Orthosis (RGO)

Developed by Durr Fillauer Medical Inc. and Department of Prosthetics and Orthotics, Louisiana State University School of Medicine.

The essential features of this orthosis are:

1. Bilateral K.A.F.O.'s with posterior off-set knee joints.
2. Polypropylene A.F.O.'s with thigh sections.
3. A rigid pelvic assembly with pelvic band covering gluteal and sacral areas, with special thrust bearing hip joints coupled together with a cable and conduit.
4. Thoracic extension with anterior and posterior velcro bands.

a. The hips joints are coupled with cables so that in standing, stability against bilateral flexion or extension is maintained.
b. Moulded pelvic girdle with controlling forces low on sacrum and buttock for control of lordsis.
c. Reciprocating action of hip joints so that in walking, one hip flexes as the other extends.
d. Carbon fibre reinforcements at ankle for stable standing base.

Again, ambulation is provided by use of rollator/crutch. The key to the RGO is the cable coupling to each extremity which permits free unilateral hip joint flexion/extension when a step is attempted. To operate the brace, the patient uses his crutch to transfer his weight and the cable then permits free hip flexion on the swing side and extends the hip on the stance side. When full

bilateral hip flexion is needed for sitting, the patient disengages the cable by unlocking a latch which in effect lengthens the cable.

The RGO cannot accommodate such a range of deformities as the HGO: leg length discrepancy up to ⎓ 3cm; knee flexion up to 10°; scoliosis controlled by spinal jacket.

Careful assessment is necessary to insure that the most appropriate orthoses is prescribed for the patient. This assessment should be carried out by an experienced team consisting of Consultant, Physiotherapist, and Orthotist and should take into consideration such factors as the childs weight, structural deformities and motivation.

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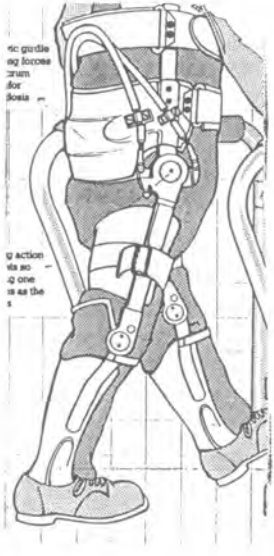

CHILDRENS CENTRE ORTHOTIC CLINIC

University Hospital of Wales, Cardiff.

Julie Wilding, Lyn Horrocks - Senior Physiotherapists, Childrens Centre.

The Childrens Centre has been running a weekly orthotic clinic for several years. The clinic, held in the therapy room at the centre, is staffed by a Senior physiotherapist, an appliance officer and two orthotists from Orthocare, with continual close liaison with Paediatricians.

A child is usually referred to the clinic by their physiotherapist, and then the clinic takes on the orthotic management of the child. This has many advantages over a child being seen in an appliance department.

1. The child is in familiar surroundings and relaxed atmosphere.
2. The physiotherapist can liaise directly with the orthotist and can exchange ideas with the child and his parents present.
3. It enables the therapist and orthotist to work together for set aims.
4. Monitoring of any problems is made easier as parents can bring their child back to the clinic directly without further referral.
5. There is a set time when all the physiotherapy staff and parents know an orthotist will be available.
6. Continuity in orthotic care.
7. Improved communication.
8. Cost effective.

The clinic caseload consists largely of pre-school children with some older children who are in normal school. The bulk of the footwear supplied is composed of Wizzard and Piedro Boots, with a wide variety of adaptations, and occasionally made to measure boots. However, in contrast to this, the clinic also adapts ordinary footwear where possible, and just gives parents advice on the purchase of footwear. A lot of work is also being done on the benefit of minor adaptations.

As well as footwear, made to measure Hartshill splints are also supplied through the clinic. When a splint has been supplied to a child, it is reviewed after two weeks to ensure that the splint does not need any alterations. These splints are usually requested by the child's physiotherapist as an aid to treatment, and she will monitor the effect on the child's gait. They have been found to be very helpful in children with altered tone. The Hartshill splint acts to help the child keep the heel down when standing, so aiding weightbearing and inhibition of increased tone, and promoting heel strike when walking, thus improving gait.

One difficulty experienced by parents (and some therapists) is getting the child's splint on at home, particularly in the morning when the child is more stiff. This can be helped by giving the child some movement and inhibition prior to having his splint and footwear on. It is also helpful to have boots and footwear that allow easy access to the toes, to ensure that they are not curled.

The aims of the Orthotic Clinic are:

1. To provide a high standard of orthotic care.
2. To work in conjunction with the child's physiotherapy treatment.

3. To provide a forum for the exchange of ideas, and the monitoring of new development.
4. Co-ordinated approach.

We would be interested in others involved in similar clinics.

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CHILDREN AND PHYSIOTHERAPY WORKING WITH PARENTS

Miss N. Hare, Supt. Physiotherapist Paediatric Services, Nottingham.

Children can benefit from Physiotherapy in many ways and in Nottingham in many different situations. Our Children's Physiotherapy Service is organised across the city, and we find ourselves working in schools, hospital out patients, intensive care units and wards; in neonatal units, health centres, day nurseries and even church halls! The children we see may be babies, school age or teenagers; acutely ill, disabled, or bothered by pain or the result of injury. A number are less easy to diagnose and have difficulty with moving or fail to follow the usual progress of development. Whenever and wherever we see them, whatever the problem, the parents are there as the third party to complete the package, sharing their anxieties and concerns, giving insight into the person that is their child, and so often facilitating our work with their determination and courage to work with us.

What has the physiotherapist to offer the child and his family? Or the child and his school, the child and the nursing staff, on any ward or unit? Why is it so true that the best results are achieved when the package is complete and the therapist parent/carer and child work closely together?

During our three year training, Physiotherapists are given a basic understanding of anatomy and the various systems of the body, and the many medical and traumatic conditions which affect the performance of that body. Quite rightly, emphasis is laid on the tricks of our own trade, the physical ways of solving problems of chest disease and breathing difficulties, pain, injury, movement, and damage to the brain and nervous system. A few weeks on a placement with children is about all that there is time for, but it is up to the individual, after graduation, to pursue her interest, attend post graduate training, and visit centres of excellence to enhance her knowledge and understanding of children's problems. In Nottingham this is encouraged, and knowledge gained becomes knowledge to share with other team members.

One area particularly relevant to children is a knowledge of development and an understanding of the constantly changing phases of childhood. Here we work very closely with our colleagues in Speech and Occupational Therapy. Together the therapies combine to re-train the child's difficulty overcome his illness, structure his environment, so that he can join or return to his life at home or school. As Physiotherapists we assess the difficulty or acute problem, and, within our knowledge, advocate treatment regimes and programmes which are then explained to and shared with the parents, who in their own way have much to contribute.

There is always something to hear about from a parent; there is also a great deal to learn from their observations and experiences. Whether the children are very sick, recovering from illness, or physically disabled or delayed, requiring years of help and intervention, the **parents** are always the vital link between the Physiotherapist and the quality of life of their child. An important philosophy which we share is that it is his **problem** which creates the link with us; that as a child he belongs first and foremost to his family; we would always hope to work within the wishes and structure of that family.

As with every area, our resources are limited in relation to what we would like to do now, and what we plan to do. But we are constantly thinking and planning ways of making the "jam go round!" At the present time we are working closely with the Department of Child Health and their developments within the Community and hospitals for the better organisation and care of certain children's diseases; with the teachers in the special schools to develop a curriculum that includes an understanding of movement and physical difficulties; with the adult services alerting them to the problems of young adults with physical disabilities; and we are beginning to plan enthusiastically for the proposed new Childrens Resource Centre on the Sandfield site, at the City Hospital.

Whatever the future holds, if our staffing levels were increased a hundred fold, our ideal "package" for treatment and management would be the same: the child, the Physiotherapist and his parents.

Treatment of the child may be designed and augmented by the Physiotherapist but to be successful, should be carried out within the trust and understanding of his parents.

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NOTES FROM THE NATIONAL COMMITTEE

The last committee meeting of the Association was held on Wednesday, 27 January, 1988, in London.

The meeting was preceeded by a meeting of the PRO with Regional Representatives. The aim of this meeting was to draw up guidelines for Regional Representatives. The meeting was successful and in future all National Committee meetings are to be preceeded by a Regional Representative meeting.

Two sub-committees were set up in July. The first, to look at the relationship between the Paediatric Physiotherapist and Conductive Education reported back with a statement which is enclosed in this edition of the newsletter. The second, to produce a code of good practice for paediatric physiotherapists, gave an interim report. This was included in your February Newsletter for comment. This committee are due to give their final report at the next committee meeting.

Two new studies are being contemplated.

1. To look at treatment evaluation studies. We need to be able to measure the effectiveness of our treatments, and publish the results, if we are to adopt a high profile in the future. Elma Bell is about to undertake a study on the 'Effect of Plastering the Lower Limbs of Children with Cerebral Palsy'.

Do you know of any other treatment evaluation studies in progress, or do you have ideas for a study? Please contact the Secretary with details.

2. We are intending to set up a sub-committee to look at resources across the country. We need volunteers to join us in this massive venture. Interested? Please contact the Secretary.

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APCP STATEMENT ON THE RELATIONSHIP BETWEEN THE PAEDIATRIC PHYSIOTHERAPIST AND CONDUCTIVE EDUCATION

Following intensive press and media coverage which has been given to Conductive Education in recent months, Paediatric Physiotherapists have been prompted to look more deeply into the role and relationship between systems of Physiotherapy and Conductive Education. In a modified form compatible with our education system, Conductive Education has been practised in this country for some years.

It is felt that clarification of the role of the Paediatric Physiotherapist and Conductor is therefore needed. "Paediatric Physiotherapy is the treatment of any childhood condition, whether acute or chronic which threatens physical development and therefore may handicap potential for adult independence", (APCP Information Leaflet). The conductor is a teacher who studies brain injury problems. She "teaches" and educates and takes care of the most elementary functions to be done. She arouses interest, creates attention, informs the children about tasks, and evaluates the solution on the basis of her constant observation - makes the plan for further lessons" (Hari - 1970).

There are similarities in the two approaches to the management of these children:

1. Both aim to get the best possible function and quality of life for the child, and make the child as independent as possible.
2. Similar techniques are used to treat sensorimotor conditions i.e. they teach the child how to move and to walk by similar methods.
3. Assessments are performed. Physiotherapy assessments are both functional, developmental and neurological. In Conductive Education assessments are only functionally based.
4. Parents are involved and are considered to be very important to treatment and daily management.
5. Progress is constantly evaluated and recorded.

Despite these similarities there are major differences:

1. Conductive Education selectively treats specific neurological conditions in children and adults -
   This is only part of the overall work of the Paediatric Physiotherapist Children with varying conditions and problems of a physical nature are referred to physiotherapists who work with problems of movement as part of the multi-disciplinary team.

2. Conductors work in groups and are very selective in considering the problems, abilities, ages and similarities of their patients. The aim being for the child to walk independently, because in Hungary, where this method originated, unless they can do this, they may not attend school to be educated.
   Physiotherapy does not have any selectivity in the treatment of patients. It is mostly carried out on a one-to-one basis, and is continued when the child is placed in school.
3. With Conductive Education treatment is institutionalized, children and adults are trained in a way of life 24 hours a day.
   Physiotherapy is Community based, and this involves treating children in their own homes, schools, hospitals and Child Development Centres. This approach relies on parents/carers adequately carrying out the management programme over 24 hours in their normal environment.
4. In Conductive Education the child must have understanding of language as it is an important component of the programme, and therefore essential to its success.
   In Physiotherapy, whilst language is also important, there are many instances where other forms of communication are sought and used.
5. With Conductive Education the child is encouraged to move in any way he can, despite the quality of movement.
   Physiotherapy aims for the development of good movement patterns prior to the development of mobility, thus encouraging the child to move in a more normal way.
6. Conductive Education selects children with a specific brain injury to participate in learning programmes.
   The Paediatric Physiotherapist works with other professionals to assess the needs of a particular child and his problems, within the family context, and to formulate a treatment/management programme which will maximise the development of the individual's potential towards independence.

Whilst both Physiotherapists and Conductors offer a management plan they contain different concepts and approaches to treatment. Trained Paediatric Physiotherapists dealing with brain damaged children are often eclectic in their choice of approach, and whilst adapted Conductive Education has proved successful in this country, it is not a panacea for all problems.

In conclusion, Physiotherapists in no way decry the use of Conductive Education. It has been adapted and used in this country with cerebral palsied children, with excellent results, and will continue to be used. However, it must be recognised that it is not the only system used in managing movement problems in children. There are some excellent centres in Britain where various other methods are used, to achieve equally successful results, without the benefit of publicity.

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ABSTRACTS

Title: **A two-year follow-up study of children, with motor co-ordination problems identified at school entry age.**

Authors: S. H. Roussounis, T. H. Gaussen and P. Stratton, Regional Child Development Centre, St. James's University Hospital and Department of Psychology, University of Leeds.

Source: Child: care, health and development, 1987 13, 377-391.

This study had two main sections - firstly to produce a standardised motor test suitable for use on children first starting school at their first medical check and to assess whether children who failed these tests were recognised as having motor co-ordination problems by their parents and teacher.

The second section investigated the educational performance of these children two years after their difficulties had been identified.

201 children, (96 males - 105 females) were chosen from 3 primary schools in Leeds - the average age being 5½ years.

A battery of six motor co-ordinator tests were given to these children consisting of:-

Gross Motor:-

a) Standing on alternate legs for 30 seconds.
b) Hopping.
c) Walking along a straight line 6ft.

Fine Motor:-

a) Finger tapping - index finger - number of taps recorded.
b) Peg moving - time recorded.
c) Bead threading - time recorded.

All testing was done by two paediatric physiotherapists.

17 Children who failed the test, were matched with the next child alphabetically of the same sex in the same class.

A questionnaire was then sent out to their parents and class teachers.

These children were re-tested two years later - another questionnaire being sent to parents and teachers.

All the poorly co-ordinated children had improved without specific intervention but were still poor compared with the control group.

These children were poor in general academic performance and writing skills in comparison with controls but there was no significant difference in reading skills.

This article ends with interesting discussion and comparisons between other similar studies. It was felt the simple motor tests outlined were reliable, easily administered, and suitable to administer to all children at school entry age.

Title: **Trends in birth prevalence of cerebral palsy.**

Authors: P. O. D. Pharoah, T. Cooke, I. Rosenbloom, and R. W. I. Cooke. Departments of Community Health and Child Health, University of Liverpool.

Source: Archives of Disease in Childhood. 1987 vol. 62 pp. 379-381.

A register of children born with cerebral palsy within the Mersey RHA in the years 1966-1977 was compiled from various sources. 685 cases were recorded (1.51 per 1000 live births), 403 boys, 282 girls.

The most common types were:- spastic hemiplegia (27%), spastic quadriplegia (27.7%), spastic diplegia (21%) and mixed quadriplegia (8%).

Cerebral palsy was considerably more prevalent amongst low Birth Weight children. This lack was felt due perhaps to the increased survival of such children due to improved neonatal care - and also perhaps to improved follow-up care and recording.

Title: **Management of Asthma in Schools.**

Authors: R. A. Hill, J. R. Britton and A. E. Tattersfield. Respiratory Medicine Unit, City Hospital, Nottingham.

Source: Archives of Disease in Childhood 1987:62 pp. 414-415.

This article starts by stating asthma is the most common chronic disease of childhood, associated with school absenteeism and reduced participation in school activities and games. Modern treatment of asthma is based on the inhaling of drugs which can be safely self-administered by virtually all school age children.

A questionnaire was sent to head teachers of 245 primary and 46 secondary state schools in the Nottingham area - the response rate being 91%.

The majority of schools were informed that children were asthmatic from the parents, usually verbally. Only 25% asked for details about health on admission forms.

Responsibility for supervising the use of inhalers lay mostly with the teaching staff except in secondary schools where the school nurse provided another form of support. In 65% of primary schools the inhalers were handed in - but only in 10% of secondary schools.

8% of primary school teachers and 15% of secondary school teachers received instruction in the use of inhalers.

40% of school teachers were concerned about their lack of preparation to deal with asthmatic attacks.

The article finishes by suggesting school medical services could play a larger role in educating teachers and in the supervision of children with asthma. It also suggests there should be more formal communication at school entry concerning health problems - it also queries how much access should children be allowed to have their inhalers without adequate supervision.

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WHAT DOES THAT MEAN?????

The increasing use of mnemonics in the press and on the Media can be mystifying, and whilst we know that the list must be enormous, it is hoped that the following list may be helpful. Where possible addresses are included.

M.N.D.A.	Motor Neurone Disease Association.
A.F.A.S.I.C.	Association for all Speech Impaired Children.
R.N.I.D.	Royal National Institute for the Deaf-Room, 14 Toynbee Hall, 28 Commercial Street, London E1.
I.S.A.A.C.	International Society for Augmentative and Alternative Communication.
A.S.B.A.H.	Association for Spina Bifida and Hydrocephalus, Tavistock House North, Tavistock Square, London WC1. Tel. 01 388 1382.
R.D.A.	Riding for the Disabled Association, Avenue R., National Agricultural Centre, Kenilworth, Warwickshire CV8 2LY.
A.R.C.C.	Action Research for the Crippled Child, Vincent House, Springfield Road, Horsham, West Sussex.
P.H.A.B.	Physically Handicapped and Able Bodied, 44 Devonshire Street, London.
N.S.A.C.	National Society for Autistic Children, 1a Golders Green Road, London NW11.
S.P.O.D.	Sexual and Personal Relationships for the Disabled, The Diorama, 14 Peto Place, London NW1 4DT.
N.A.H.A.	National Association of Health Authorities, Garth House, 14 Edgbaston Park Road, Birmingham B15 2RS.
G.L.A.D.	Greater London Association for Disabled People, 336 Brixton Road, London SW9 7AA.
M.A.V.I.S.	Dept. of Transport, TRRL, Crowthorne, Berks RG11 6AU. Tel. 0344 770456.
P.P.I.A.S.	Parent to Parent Information on Adoption Service, Lower Boddington, Daventry, Northamptonshire NN11 6YB. Tel. 0327 60295.
I.C.A.N.	International Childrens Aid Nationwide, Allen Graham House, 198 City Road, London EC1V 2PH. Tel. 01 608 2462.
S.E.Q.U.A.L.	Special Equipment and Aids for Living, 27 Thames House, 140 Battersea Park Road, London SW11.
S.E.M.E.R.C.	Special Educational Micro Electronics Resource Centre, City of Manchester College of Higher Education, Hathersage Road, Manchester.
T.A.M.B.A.	Twins and Multiple Births Association, 20 Redcar Close, Lillington, Leamington Spa, Warwickshire CV32 7SU.
R.N.I.B.	Royal National Institute for the Blind, 224 Great Portland Street, London W1N 6AA.

N.S.M.H.C.	National Society for Mentally Handicapped Children, Pembridge Hall, 17 Pembridge Square, London W2 4EP.
A.P.M.H.	Association of Professions for the Mentally Handicapped, 126 Albert Street, London NW1 7NF.
N.A.W.C.H.	National Association for the Welfare of Children in Hospital, Exton House, 7 Exton Street, London SE1 8UE. Tel. 01 261 1738.
D.L.A.	Disabled Living Foundation, 346 Kensington High Street, London W14 8NS. Tel. 01 602 2491.
R.E.M.A.P.	Rehabilitation Engineering Movement Advisory Panels, Thames House North, Millbank, London SW1P 4QG.
C.P.A.G.	Child Poverty Action Group, 1 Macklin Street, London WC2B 5NH.
M.I.N.D.	National Association for Mental Health, 22 Harley Street, London.
R.A.D.D.	Royal Association in aid of the Deaf and Dumb, 7 Armstrong Road, London W3 7JL.
T.N.A.U.K.	Talking Newspaper Association of the UK.
N.C.B.	National Childrens Bureau, 8 Wakely Street, London EC1V 7QE.
C.C.D.	Central Council for the Disabled, 34 Eccleston Square, London.
C.C.P.R.	Central Council of Physical Recreation, 70 Brompton Road, London.
P.P.A.	Preschool Playgroups Association, Alford House, Aveline Street, London.
A.C.E.	Aids to Communication in Education, Ormerod School, Wayneflete Road, Headington, Oxford OX3 8DD.
D.E.B.R.A.	Dysprophic Epidermolysis Bollosa Research Association, 7 Sandhurst Lodge, Wokingham Road, Crowthorne, Berks RG11 7QD.
O.S.C.A.R.	Organisation for Sickle Cell Anemia Research, 200a High Road, Wood Green, London N22 4HH.
R.E.M.A.P.	Rehabilitation Engineering Movement Advisory Panels, 25 Mortimer Street, London W1N 8AB.
H.C.S.G.	Hyperactive Childrens Support Group, 59 Meadowside, Angmering, Sussex BN16 4BW.
B.A.B.C.E.	British Association for Early Childhood Education, Studio 3:2, 140 Tabernacle Street, London EC2A 4SD.
S.E.N.S.E.	National Deaf, Blind and Rubella Association, 311 Grays Inn Road, London WC1X 8PT.
DOVETAIL	British Telecom's Action for Disabled Customers Newsletter, BT Centre, 81 Newgate Street, London EC1A 7AJ. Tel. Linkline 0345 581456.

C.A.R.E.	Cottages and Rurale Enterprises for the Mentally Handicapped.
S.O.S.	The Stare Organisation for Spastics.
C.L.A.P.A.	Cleft Lip and Palate Association.
A.B.P.N.	Association of British Paediatric Nurses.
S.W.D.A.	South Wales Dyslexia Association.

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CORRESPONDENCE

From Janet Hankinson, Snr. P/T,
The Ronnie MacKeith Centre for Child Development,
Derbyshire Royal Infirmary,
Derby DE1 2QY.

The Ballerina Syndrome - Discussion

I was interested to read Noreen Hare's article on this syndrome. I would like to air my view on the neurological cause. After mild spastic diplegia has been ruled out as a reason for toe walking, there are those who still present with an abnormally strong positive support reaction. On examination, these children are often rather temperamental (with anxious parents). Their feet are tactile defensive not only on examination but also at bathtime and on dressing. In long sitting, active dorsiflexion to 90° is often seen and, in some cases passive range is beyond 90° with the toe in mid position. On standing the child is immediately up on its toes, but if stable on two legs the feet may then become plantigrade. In long standing toe walkers, there is often some shortening of the tendo-achilles, and this could be a reason for a valgus foot in some when plantigrade. From a plantigrade stance, the child is immediately up on its toes again at the beginning of transfer of weight to one leg for walking.

Could this be to compensate for poor stability and strength in the stance leg? This is definitely seen in those with dystrophies in order to stabilise hips and pelvis as Miss Hare points out.

In the case of Ballerina Syndrome, this instability may be due to delayed Maturation of gait from primitive stepping to independent walking. The dynamic functional demands of upright locolotion in a child with poor hip/pelvic control and strength may, I suggest, be a cause of this syndrome. I note that some children without tendo-achilles shortening do develop normal gait in time. For those with tendo-achilles shortening, I have found AFO's of benefit. In one case, the feet were so tactile defensive that AFO's were not tolerated. This child was discharged by the orthopaedic surgeon after bilateral ETA's.

Although we do not see many of these children, it is an interesting topic for discussion. Have other PT's any ideas on the cause?

From Miss Noreen Hare,
Supt. Physiotherapist, Paediatric Services, Nottingham.

I am most interested to read the letter concerning the Ballerina Syndrome from Miss Janet Hankinson, and warmly thank her for it. May I offer the following comments for further thought and discussion amongst members?

Miss Hankinson is describing a group of children who, to my way of thinking, most appropriately represent "minimal brain damage". They have difficulties with movement, a "balance problem" but display no overt signs of brain damage, such as alteration in muscle tone.

When a child can stand with heels down, but rises to toes to initiate walking, he is demonstrating an inability to advance the body weight over flat feet, which is the prerequisite of the first step. He therefore compensates by rising on the toes to propel himself forwards. On closer examination he will be found to have a tendency to fall backwards, when standing, which can be detected by observation of standing when wearing leg gaiters. I would be most interested to know the result of bilateral ETA's in such a child, in terms of stance, gait and overall physical performance.

It is interesting to note that perhaps the child, who resisted AFO's is the very child who is unable to walk without using foot plantar flexion to compensate for his "balance problem". I have seen such children post operatively with flat feet but exaggerated knee and hip flexion which on a long term basis is inefficient. In one case the child was only able to walk using a rollator or block cart. Work that one out!

Thank you for your interest.

The Ballerina Syndrome

As outlined by Noreen Hare in the February '88 issue of APAC the "Ballerina" syndrome is one of those tricky little problems with no easy solution. Sometime ago though DERON, designers and manufacturers for special needs children, came up with an idea that has been proving very useful. It is called the DERON WALKWELL. It consists of two small pressure pads which slip inside the childs shoe on the heel. These pads connect to a small control box which attaches to the child's waist. This will make a buzzer sound whenever pressure is applied with the heel. If the child walks on their toes then they will not receive the "reward". It's highly motivating because it's great fun to use. Children love it.

For further details contact: Deron, Unit 8, Foundry Lane, Byker, Newcastle-upon-Tyne, NE6 1LH.

If you have any other problems that we may be able to help with then please get in touch. We are always willing to listen.

Steven Venus B.Sc.,
Special Needs Advisor.

Another reader suggests that an inexpensive means of encouraging heel strike during walking is to purchase squeaker pads (found in toy shops, and especially craft shops where material is sold for squeaky toys). Place the pad inside the heel of the childs' shoe - it is an almost flat disc about the size of a 2p piece - and if a squeak is heard the heel is down. If no squeak, the child is toe walking.

A NOTE ON A STUDY INTO THE EFFECTS OF EARLY PHYSIOTHERAPY ON THE HIGH RISK INFANT

The abstract, in the February Newsletter P24-25, of the Canadian study by Piper et al, into the effects of early therapy on the high risk infant, must have been interesting but also disturbing to many physiotherapists, who are constantly urging their neonatologists and paediatricians to refer babies early for treatment.

A previous South African study (Goodman et al 1985) also showed that early physiotherapy had no benefit. This study, like that of Piper et al used only clinical criteria; principally, birthweight, Apgar scores, prolonged ventilation, gestational age and small for dates, to identify infants at risk of developing CP. It is likely that a considerable number of normal babies were included in both studies.

A further limitation of these studies is that the infants were only monitored to the age of one year before findings were evaluated and conclusions drawn. However, Piper et al acknowledged, in their discussion that "the positive effects of early therapy may only be detectable with further maturation". As in the South African study, they are continuing to monitor the developmental progress of the children, to evaluate the long term treatment effects, but have not yet reported.

In Liverpool, in 1987, we started a very similar controlled trial amongst babies from the Mersey Region Special Care Baby Units. Cerebral ultra sound and/or somatosensory evoked cortical responses are being used to identify babies with brain lesions strongly associated with the subsequent development of CP. All the babies are considered to be grossly neurologically normal by the clinical medical staff. They are randomly allocated to an early intervention group and a control group. The early intervention group receive regular physiotherapy management/treatment as soon as they leave the SCBU. The control group are offered physiotherapy according to our normal practise, i.e. when they develop abnormal neurological signs.

The children are being assessed by two independent assessors, a physiotherapist and a senior registrar in community paediatrics. The assessments are taking place at regular intervals until the children reach five and possibly eight years of age.

The children and families will also be monitored by a psychologist from the Department of Child Psychology, University of Liverpool. We hope that our belief, based on wide experience, that the physiotherapist plays a valuable role in supporting the parents through the important and often difficult early months, is confirmed. The research is being co-ordinated by Dr. A. M. Weindling, Senior Lecturer in Neonatology, University of Liverpool and is funded by Action Research for the Crippled Child.

References: Piper M. C. et al. Paediatrics, 1986. 78 216-224.
Goodman M. et al. Lancet, 1985. ii 1327-1330.

E. Lewis, February 1988. Research Physiotherapist, Dept. of Child Health, University of Liverpool.

From Linda Whitaker, Supt. Physiotherapist (Community), Ann St. Health Centre, Denton, Manchester M34 2AS.

Since September 1987 we have been able to allocate some extra time for seeing children placed in mainstream schools, who require physiotherapy input. We are collecting information about the children and their needs and plan to conduct a survey including a questionnaire to parents and schools. I am writing to enquire whether any similar surveys have been carried out in other districts?

I would like to hear from other people who have some experience doing this.

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BEING HANDICAPPED by Jenny Preedy aged 11½ years.

They think they can help,
Suppose sometimes they do,
But still locked inside you
Is the feeling of being different
- HANDICAPPED.
But think of the children who are worse off.
Who can't walk, find it hard to speak, or even blind or deaf
They have a go.
So what ever you do,
DON'T give in.
Even if you think YOU can't do it
TRY, you don't know until you've had a go.
Then, if you can't do it,
Then, you can say "I've tried"
Don't give in either, if someone calls you names,
Just think to yourself
"Is that all they do, call me names?"
Just walk past them, don't feel down
There's always something to be happy about,
So, whether it's raining or shining
BE HAPPY.

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EQUIPMENT

Stools on Castors

Very stable, with legs fitted well to corners of the base to prevent tipping. Multidirectional castors allow free movement. Available with plain or padded top. Price £20.
Jenx Ltd., 74 Hoyland Road, Sheffield S3 8AB.

Rings, Balls, Rafts and Childrens Structures

Inflatable structures in seven bright colours, for use in swimming pools. For information and price list:- Airspace, Unit 6 Rassau Industrial Estate, Ebbw Vale, Gwent NP3 5SD. Tel. 0495 307677.

Easirise Toilet Chair

Can be fitted over any standard toilet to assist independent standing up and sitting down. Power driven.

Information: S. M. L. Aids, Bath Place, High Street, Barnet, Herts EN5 5XE. Tel. 01 440 6522.

Computer Hardware

The Robin Light Pen - versatile pointing device for instant contact. Picture memory and print out facility. For use with BBC computers only Marconi Tracker Balls - for those with difficult hand control. Micromate - touch sensitive screen. A robust unit which attaches to the front of a standard TV set or monitor 12" x 16".

Large selection of special switches.

All the above available from: Toys for the Handicapped, 76 Barracks Road, Sandy Lane Industrial Estate, Stourport-on-Severn, Worcs. DY13 9QB.

String Swing or Hammock

Made from heavy duty nylon string, with sturdy steel rings at each end. From Toys for the Handicapped. Address as above.

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TOYS

Small thumbcover mice and interesting small hand puppets, plus a range of individually designed soft toys are now being made at very reasonable prices by H. M. Toys, Unit 6 St. Leonard's House, St. Leonard's Gate, Lancaster LA1 1NN. The mice are very useful to encourage hand regard and discourage thumbsucking.

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VIDEO

A video on 'Peculiar Gaits' is available from Graves Medical Audiovisual Library GVC53VA/GVC53BA by Dr. Buchanan, Consultant Paediatrician (retired), Leeds General Infirmary, Duration - 17 minutes.

It is described as a "test for observation in students. A series of children is shown, each of whom has something wrong with the way he or she walks". The aim is to note the disabilities, and if possible, to make a diagnosis from them.

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PUBLICATIONS

Play is a Feeling.
Brenda Crowe. Unwin paperbacks £3.50.

Living Skills for Mentally Handicapped People.
Christine Peck and Chia Swee Hong.
Croom Helm. £9.95 paperback.

1. **Helping the Handicapped Child with Early Feeding.**
   A manual for parents and professionals -
   Jennifer Warner. £4.95
2. **Early Childhood.**
   Merle Karnes. £9.50
3. **Kids in Motion. (Early childhood movement)**
   Pamela Gilroy. £8.50 paperback.
   Kids in Action. (Developing Body Awareness in Young Children)
   Pamela Gilroy. £9.50 paperback.
4. **All About Me - Activities for Self Awareness.**
   Constance McCarthy and Ann Sheely. £12.75

All the books 1-4 available from Wimslow Press, Telford Road, Bicester, Oxon OX6 0TS. Tel. 0869 244644.

Lifting Techniques for Lifting and Moving Disabled People.
Produced by LINK Central TV.
£21.65 inc. p. & p. from Richard Nathanson. MRS. 8, Morocco Street, London EC1N 8RS.
Cheques payable to Richard Nathanson.

Occupational Therapy for Children with Disabilities.
Dorothy Penso.
Croom Helm. £8.95

Booklets.
The Physical Treatment of Cystic Fibrosis.
Diana Gaskell MBE FCSP and Barbara Webber MSCP of The Brompton Hospital, London.
For copies apply: Cystic Fibrosis Research Trust, Alexandra House, 5 Blyth Road, Bromley, Kent BR1 3RS. Tel. 01 464 7211.

Protect Your Child.
A guide about Child Abuse for parents.
Copies free of charge - NSPCC, 67 Saffron Hill, London EC1N 8RS.

Fabricwise-Fabric Choice, for People with Disabilities.
Available from the Disabled Living Foundation. £2.50 inc. p. & p.

We Can Play and Move.
Sophie Levitt. AHRTAG £2.

HAPPENINGS

★ Dr. I. A. McKinlay who has been an Honorary member of APCP for a number of years, has recently received a Meritorious Service Award for his work within the Health Service. We offer Dr. McKinlay our warmest congratulations on the receipt of this well deserved honour.

★ The Introductory Bobath Course held in Cardiff was the subject for a BBC Television Wales Today News Broadcast. The fact the BBC Wales Today News presenter Noreen Bray had received an invitation to chair the opening session of the course was mere coincidence. Her invitation was accompanied by information which included the APCP statement on Conductive Education. The item included interviews with a parent, Jill Stern Tutor at the Bobath Centre, and Viv Williams APCP National Committee member.

The item was concise, well balanced, sensitive and made the point that more resources need to be made available in this country, to develop existing resources for staff and training, such as the Bobath Course. Positive publicity like this is essential, so that the public is made aware of what we can offer, and what our needs are, to enable us to provide the best possible service for our children.

★ On Tuesday March 1st our Chairman - Mrs. Maggie Diffey - was invited to a reception to celebrate the Golden Jubilee of the Association of British Paediatric Nurses, and held in the Cholmondeley Room at the House of Lords. Lord Lovell-Davis, whose wife is involved with NAWCH, was host on this occasion where there were about a hundred guests. It was a splendid event and a great opportunity to talk to members of the paediatric nursing group and their guests. Several Members of Parliament joined the gathering during the evening, and there were some interesting discussions with regard to the problems within the NHS before the gathering ended all too quickly at 8.30 p.m.

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HERE AND THERE.....

John Grooms Association for the Disabled is now running a Visitors Club which offers disabled members reduced rates at the London Tara Hotel.

A quarter of babies born in England are 'accidents' and two thirds are unwanted, according to a report by Ann Cartwright of the Institute of Social Studies in Medical Care, and published in Mother and Baby Magazine.

The expertise of four Doctors from King's College Hospital is being passed on abroad. They are setting up a unit in Singapore at the request of the islands Government, for day treatment for In Vitro fertilisation.

Thanks to recent discoveries in genetic and chromosomal diseases, using human embryos as guinea pigs is no longer necessary. This claim was made by the Parliamentary Medical and Scientific Advisory Committee to the all-party Parliamentary Pro-Life Group. Success was being achieved in unlocking the secrets of Cystic Fibrosis, Muscular Dystrophy, Huntingdons disease and Retinoblastoma without the need for research on human embryos.

Following surveys in several countries, scientists have said that ninety-five per cent of children up to the age of ten, believe the earth is flat!

The NSPCC says that three or four children a week die from abuse or neglect. Last year the NSPCC helped more than 50,000 children, more than half the cases being brought to the society's attention by the public. Almost two out of five of the children referred are under five years of age.

Psychologists have launched an investigation into how children learn to recognise faces. Professor Haydn Ellis of the University of Wales Institute of Science and Technology, will be studying children aged three to seventeen.

More than one in ten young children of pre-school age suffers from asthma, but the condition is often not diagnosed according to the fortnightly medical bulletin of the Consumers Association. It advises doctors that few drugs are effective in treating asthma in children under 18 months old, but several treatments are useful for children over that age.

A sharp rise in Cot Deaths is shown by the latest figures from the DHSS for 1986. Notable features in many cases are younger than average mothers, low birthweight babies who may have been involved in multiple births, and the more children in the family the higher the risk. Sadly a definite cause for this tragic syndrome has not yet been established.

To promote liaison with paediatric therapists all over the country P.I.P. (Paediatric Interest People) is organising a regional day on MAY 12th 1988 from 12-4 p.m. For venue and agenda contact: Susanna Chow, PIP Regional Co-ordinator, Community Paediatric Schools Service, Goldsworth Park Health Centre, Woking, Surrey GU21 3LW. Tel. 04862-28201 ext. 304.

Cyclists are more vulnerable per mile to accidents than any other road users, so why don't more cyclists wear safety helmets, as the head is the most likely part to be damaged in an accident?

The National Library for the Handicapped Child, situated in the Dixon Gallery in the buildings of the Institute of Education in Bloomsbury is open Monday-Friday 10-5 p.m. available to parents and professionals working with children with special needs. For further information contact the Librarian. Tel. 01 636 1500.

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PROFILE OF NORTH EAST REGION

Our region is very large and varied, for this reason it is difficult to give an overall picture. It stretches from the Lancashire border in the West to the sea in the East. The Scottish border is our Northern boundary and to the South we extend as far as Hull, Leeds and Wakefield. Northwards and Southwards we have large Metropolitan areas while much of the rest of the region is rural and has quite different problems. In the Leeds/Bradford conurbation to the South there are large teaching hospitals. The Cystic Fibrosis Unit at St. James's Hospital (Leeds) is well known and has featured in several Television documentaries. The regional Child Development Centre is also based at St. James's Hospital. The staff have strong links with the premature baby unit in the hospital and they also assess many children from other parts of the region. The Physiotherapy staff attached to the special schools in this area are finding great difficulty in successfully treating the ever growing number of children with special needs who are in Mainstream schools. There is no additional funding for this extra work.

In Cleveland the emphasis is also on integration and for physically handicapped children this is now complete. In Stockton, units have been added to existing schools and adaptations to various schools have been made in other parts of the County. Several schemes have been started in this area including an under five special play group and a Clumsy Club. Both these schemes have Physiotherapy involvement.

To the North, Metropolitan Newcastle also has large teaching Hospitals and many more Paediatric Physiotherapists than are A.P.C.P. members. Also here is the Percy Hedley School where a form of Conductive Education is successfully used.

The Rural areas of our region (Northumberland, North Yorkshire and Humberside) have there own problems. Scattered population, lengthy travelling time between patients, and overstretched Staff. To give an example the four main Centres in North Yorkshire are roughly thirty miles apart. These distances mean that a large part of the working day is spent travelling and less children can be treated. It also means that parents have the same difficulty when bringing their children to a Child Development Centre. Unfortunately staffing levels do not take this problem into account. Most Physiotherapists in rural communities are expected to treat In-patients, those attending The Child Development Centre, Children in Special and Mainstream schools and also work in the Community doing Home Visits. Time must also be spent on reports, Formal Assessments and of course Körner.

It will be obvious from the extent of the region that we have great difficulty choosing suitable venues for our meetings. We have a very good attendance at our day courses which we hold on Saturday, two or three times a year. Our evening lectures are less well supported as only people living in about a thirty mile radius and owning a car can make the journey. We are hoping that in the future we may attract more Committee members from the north of the region as for a number of years now the Committee has been from the Leeds, Harrogate and York areas. At the moment we have 114 Members in the Region.

Liz Barron
(Paediatric Physiotherapist)

REGIONAL REPORTS

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

The AGM and a study day on 'Seating' were held on Saturday March 12th in Preston. Plans are in hand for two one-day workshops on Juvenile Chronic Arthritis on June 10th and 11th. These are a follow up from the study day in September last year, and places are restricted to participants on the original course. Details will be sent in the near future. The Committee meet in April and will be planning next years programme. Many useful suggestions were received from the membership after the AGM and we hope to use as many as possible.

Finally, I would like to take this opportunity, on behalf of the Committee, to thank Mrs. Mary Casey who has had to stand down from the Committee after serving for 8 years. For the last 4 years she has held the office of Secretary and I'm sure you can imagine how much of this essential work has been done in her own time!

South West **Reg. Rep. D. G. Riley-Meadows, Bowerchalke, Salisbury, Wilts.**

A successful Study Day was held at Poole General Hospital on March 4th 1988 entitled 'Visual Handicap in Developmental Paediatrics'. During the day the AGM was held and the re-organised Regional Committee was elected. On March 18th a stimulating and well formulated film concerning Conductive Education and alternative methods of treatment - shown on BBC2 (South). This film was shot at Southampton General Hospital, The Cedars School, Southampton and at Lord Mayor Treloar College. This film has created much interest in the Southern Television Region.

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

On Wednesday March 2nd, about 40 physiotherapists attended our AGM and our lecture on 'Syndrome Diagnosis and its Implications' by Dr. Caroline Berry of Guys Hospital. The talk was both enlightening and informative, and the evening was rounded off with a cheese and wine buffet.

On Saturday May 14th a day course on 'Basic Counselling Skills' will be held at the Newcomen Centre, Guys Hospital. To see if any places remain, please contact: Jenny Mark, 35 Shepherds Hill, London N6 5QT. Tel. 340 8743.

Planning ahead - please keep Saturday September 24th free for the next study day which will be a basic paediatric course for Junior physiotherapists.

Wales

Reg. Rep. Lyn Horrocks, 9 Garth Close, Rudry, Caerphilly, Mid Glamorgan.

Another very successful three day Introductory Bobath Course on the Management of the Multiply Handicapped Child, was held at the Combined Training Institute, University Hospital of Wales, in early March. Tutors from the Bobath Centre, London - Gillian Stern, physiotherapist, and Judy Murray, Occupational therapist, gave lectures and practical demonstrations to an enthralled multidisciplinary audience. This was our fourth Introductory Course to be held in Cardiff, and because of the enormous interest shown, we are hoping to arrange another course next year.

The Wales branch of APCP holds its AGM on Wednesday June 8th at 7 p.m. at the Childrens Centre, University Hospital of Wales, to be followed at 7.30 p.m. by a lecture on 'Arthrogryphosis' by Dr. Helen Hughes, from the Genetic Dept. at the UHW. We hope this lecture will be of great interest to therapists, doctors and teachers.

Trent

Reg. Rep. Mrs. M. Meagher, 9 Oak Road, Thulston, Derby DE7 3EW.

The fourth AGM for the Region was held on Wednesday March 9th at Nottingham City Hospital, followed by a Buffet and very interesting lecture on 'Juvenile Arthritis' by Dr. Helen Venning.

Future events planned are:

A three day follow up course on 'Sensory Integration Therapy' at Harlow Wood Orthopaedic Hospital on May 25th, 26th and 27th. Details: Mrs. T. Palmer, Newark General Hospital, London Road, Newark-on-Trent. Tel. 0636 73841 ext. 225.

Scoliosis Study Day at Lincoln County Hospital, Lincoln, on November 1st 1988. Details in August Newsletter.

Proposed Study Day on Visual Handicap in the Derby area, possibly in October. Topics for future study days will be welcomed from members.

Scotland

Reg. Rep. Miss M. Grant, 28 Buckingham Terrace, Edinburgh EH4 3AE.

Eighty delegates attended a study day on 'Seating' at the Royal Hospital for Sick Children, Edinburgh on Saturday 5th December 1987. The lecturers were Dr. Geoff Bardsley and his team from the Dundee Limb Fitting Centre.

Bobbie Jarvis and Sheila Lawton gave a splendid two day course at the R.H.S.C. Glasgow on February 26/27th on Juvenile Chronic Arthritis.

Twenty-eight members attended the AGM on February 28th. It was with regret that Liz Breckenridge's resignation was accepted, as she has been a most energetic and efficient committee member for five years. However, we were pleased to wel-

come Moira White (Dumfries and Galloway), Isobel Spence (Grampian) and Margaret Heggie (Glasgow Community), on to the committee. The new officers are: Chairman and Reg. Rep. Maureen Grant, Edinburgh. Secretary, Adrienne Lyon, Forth Valley. Treasurer, Helen Turner, Ayrshire and Arran. Course Co-ordinator, Lynn Campbell, Edinburgh Schools.

A Study Day is to be held on June 4th 1988 at the R.H.S.C. Edinburgh on 'Conductive Education'. Lynn Campbell spent six weeks at the end of 1987 at the Peto Institute in Budapest, and we look forward to her demonstration of how C.E. has been incorporated into teaching, within the Scottish Council for Spastics Schools at Westerlea and Corseford.

Finally, the committee are pleased to have been able to give financial assistance to a physiotherapist on study leave in London, and to have funded three members for the Conference in Warwick.

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

Our evening meeting in February on Muscular Dystrophy was very interesting and led to a lively discussion amongst those present. Unfortunately the attendance was small due to adverse weather conditions.

The AGM was held in York on 23rd March. Our secretary and two other committee members have resigned after serving for two or three years. A new Committee was elected for the coming year. Business completed, we had an interesting talk on "Reciprocal Gait Orthosis" by Mr. McIntosh from Poole. Our next Day Course entitled "The Way I See It" will be on Vision and Perception. We are lucky to have Wendy Harrison the orthotist from York and Judy Murray the Occupational Therapist from the Bobath Centre to speak to us. This will take place in May, probably in York. Details and application forms to be sent out to members in the next few weeks.

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PRESS RELEASE

The Inaugural Meeting of the British Association of Bobath Trained Therapists (B.A.B.T.T.) was held on **12th March 1988.**

Interest was shown by representatives of the physio, occupational and speech therapy professions.

Everybody was delighted with Dr. and Mrs. Bobath's address to the meeting. Dr. and Mrs. Bobath were enthusiastically acclaimed as Joint Presidents of the B.A.B.T.T. Mrs. Bobath described her first experience of treating a man who had suffered a stroke. She noted that his hand movement improved as she treated his arm. She was the first person to talk about muscle tone and Dr. Bobath was faced with the task of explaining how and why her handling reduced spasticity.

One of the aims of the B.A.B.T.T. will be to promote a better understanding of the Bobath concept amongst other professionals and parents.

Membership is open to all therapists, who are living in the British Isles and Eire, and who have taken the recognised 8 week course on the Bobath approach to the treatment of children with cerebral palsy and allied conditions. The annual fee will be £10. Members will receive a regular newsletter and an annual directory of members to facilitate the formation of local groups.

If you would like to join the Association please contact the Membership Secretary, Pam Stubbs, MCSP, 59 St. Michael's Road, Crosby, Liverpool L23 7UN.

Any other information can be obtained from the P.R.O., April Winstock, Speech Therapist, Bobath Centre, 5 Netherhall Gardens, London NW3 5RN.

CALL FOR SCIENTIFIC PAPERS

Chartered Society of Physiotherapy
Annual Congress 1989

September 20 - 22, 1989

HARROGATE

Persons wishing to participate in the Scientific Papers Sessions at the CSP Annual Congress 1989 are invited to submit abstracts.

An abstract must be typewritten and not be more than 250 words. Each abstract must have a title and give the author's name, institution and address. The abstract should contain a factual summary of the communication and would usually include :

- A brief introduction to the study
- An outline of methods used
- A summary of results
- A statement of the main conclusions

Preference will be given to papers that have not previously been presented. Final date for submission of abstracts is September 30, 1988.

Please submit abstracts to the Chairman, Scientific Programme Organising Committee, c/o Public Relations Department, 14 Bedford Row, London WC1R 4ED.