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**NEWSLETTER**

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# Association of Paediatric Chartered Physiotherapists

Newsletter No. 50

February, 1989

## “ARE YOU SITTING COMFORTABLY.....?”

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## EDITORIAL

Mrs. Maggie Diffey, A.P.C.P. Chairman

This newsletter is concerned with aspects of seating. How important for all of us to be 'sitting comfortably', and how much more important for the children we are responsible for during their early development.

Carefully assessed positioning is essential in order to achieve a correct posture. Correct posture is the key-stone to any successful situation and is therefore the basis of all areas of development including physical, emotional, social and intellectual development.

This applies to all people, but particularly to children with various functional problems that are the brief of paediatric physiotherapists.

Children are very individual in their needs for seating, depending on their routine, physical disabilities and general daily requirements. The paediatric physiotherapist can contribute greatly to the well being of the child and the family by her expertise and advice.

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### ANNUAL CONFERENCE - GUILDFORD 31st MARCH and 1st APRIL

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**It's a great time to get to know folk from all over the country**  
(and to hear some informative lectures!).

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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.

## **SPECIAL SEATING - IS IT REALLY NECESSARY?**

**Roy Nelham, Technical Director, Rehabilitation Engineering Unit,  
Chailey Heritage, Lewes, Sussex BN8 4EF.**

There could be a one word answer to this question and I could save a lot of everybody's time. I am not, however, taking that easy route. As much as been published on the subject of special seating I thought I would use this opportunity to take a sideways look at the subject.

The sitting posture is one that is adopted at different times and for different purposes. We, the able-bodied, have a wide range of furniture from which to choose chairs for different purposes; armchairs for relaxation, dining chairs for eating or office chairs for working. How many of these chairs provide sufficient comfort for long periods of time? How many provide the appropriate support for different activities? Not many. For example, can we eat easily in an armchair or relax on a dining chair? (Notice that it is usual to say **in** an armchair or **on** a dining chair immediately indicating different designs and uses.)

We can, however, cope with the differences in or deficiencies of the various designs of chairs and different sizes of people can use the same size of chair. This is possible because of our postural ability. We can anchor our pelvis on the seat surface to prevent us sliding off, we can adjust the position of our trunk to change sitting postures and we can completely re-position ourselves to acquire a new posture. These movements and the postural ability required to achieve them are essential if we are to make use of the furniture that is available. A survey once highlighted that the general public spend less than one minute on average sitting in (or on) an armchair or sofa before spending hundreds of pounds purchasing it and many hours, days and years using it. The assumption must be that we can make this furniture comfortable provided we like the look of it and a cursory assessment indicates that there are no serious, immediate shortcomings. Apart from the use of extra cushions, it is probably our postural ability which keeps most furniture manufacturers in business. There are, of course, some obvious notable exceptions where ergonomics or anatomical studies have had an influence on the design, e.g. the Balans range of chairs.

Children rarely sit still long enough, and grow too quickly, to justify the expense of designing chairs specifically for their size once they have outgrown infant chairs. They often, therefore, make use of the chairs designed for the adult population or they sit or lie on the floor demonstrating a level of postural ability that handicapped children who need special equipment do not possess.

Handicapped children who lack postural ability in the positions of lying and sitting are, therefore, at a major disadvantage when choosing, or having chosen for them, seats to provide a stable sitting posture. The ability to anchor the pelvis or adjust posture is invariably lacking, particularly in those who have cerebral palsy or other similar developmental delay. A handicapped child can therefore rarely use "ordinary" seats. He requires a seating system, which is designed to compensate for his lack of postural ability. The seating system should impart immediate

improvements and provide the means by which he can function and, hopefully, learn to improve postural ability. Yet how many times do we see handicapped children sitting in standard wheelchairs with, perhaps, a cushion and a waist strap the only concessions to postural control?

What happens if the seating requirements of a handicapped child are not satisfied? If the child has cerebral palsy or a similar condition then it is likely that the child will adopt an asymmetric posture. If uncorrected, this will lead to a fixed deformity. Superimposed upon this asymmetry may well be increased muscle tone. This may be as a result of the struggle to remain in the seat because the lack of postural ability has prevented the child from anchoring his pelvis on the seat base. It may also arise from the attitude of the child in space. If the child cannot anchor, the resulting asymmetric sacral sitting posture, exacerbated by the slightly tilted and reclined surfaces of the wheelchair seat and backrest, are defined as a reclined posture which is likely to be perceived by the child as an unbalanced posture creating a sensation of falling. The child naturally tries to correct this sensation by flexing his neck in an effort to bring his head and trunk over his sitting base to achieve balance. This may be perceived as a lack of head control resulting in the child being further reclined exaggerating his tendency to flex forward against gravitational effects. This effort sometimes causes the child to raise his legs and feet to counterbalance the trunk effort which leaves the child in a flexed but still reclined posture. Alternatively, the child will adopt a totally extended posture but either way a large percentage of the body weight is transmitted through the sacrum and postural stability has still not been achieved. This state of high muscle tone superimposed on the asymmetric posture will be totally non-functional and will surely lead to deformity. Children with disabilities other than cerebral palsy may not react so vigorously to inappropriate seating but the long term effects are likely to at least compromise functional ability and quality of life and probably contribute to the development of deformity.

If the consequences of not having appropriate seating, as described above, are acceptable then perhaps seating isn't necessary. But we know that these consequences are, of course, unacceptable. Special seating is, therefore, necessary and is a vital component in the treatment and overall management of children who lack postural ability. This consequently requires that the seating is therapeutically correct. Seating chosen for economic reasons alone is likely to be a waste of the price paid for it but unfortunately, the results of such a decision are rarely immediately apparent. When the results do become apparent, the person who made the decision is often not around to see the consequences.

Liz Goldsmith, a physiotherapist from Tamworth who helped to develop the SPA Collection Controller Chair and, with Rachel Golding, has published a guide to handling the severely, multiply handicapped, makes a thought provoking analogy between the prevention of deformity and the management of diabetes. The following is my interpretation of that analogy.

### **Similarity between management of diabetes and prevention of deformity**

- (a) 24 hour management required.
  - (b) Long term consequences of poor management are unpleasant or even disastrous and are well recognised.
  - (c) Communication and education between “experts” and carers/clients required.
  - (d) Family life is affected by the management procedures and even more so by the results of poor management.
  - (e) Equipment, education and training in its use is required.
- Etc., etc.

### **Differences between management of diabetes and prevention of deformity**

- (f) Effects of non-treatment are immediate but long term in development of deformity.
  - (g) Motivation of the carer/client is easier in diabetes because of immediate results but is difficult in prevention of deformity because the results are of no or inappropriate action.
  - (h) Diabetes management plans and advisory diets, etc., are readily available but there is a dearth of information or apparently conflicting approaches to management for prevention of deformity.
  - (i) Diabetes has objective measures for management through regular blood tests but there are very few measures of deformity or measures of the effects of prevention. This can result in a sense of resignation to the inevitability of deformity development.
- Etc., etc.

Similar comparisons can be made with other medical problems and it serves to show the lack of knowledge or a co-ordinated approach to the prevention and management of deformity.

This situation can change and must change. It highlights the need for research to establish the effectiveness of appropriate therapy techniques and designs of equipment and a need for the co-ordination of what is available into an agreed and proven management approach for the prevention of deformity.

It is well known that if a child has ten or fifteen minutes of therapy a day and then spends the remainder of the day and night in poor postures without appropriate support or control, the therapy will be undone. The poor postures will dominate and inhibit function leading to “fixed poor postures” or deformity. Without special seating I think therapists can waste an awful lot of therapy time and the management of the handicapped child can be compromised.

Whilst special seating is a necessary part of an overall approach to the management of a handicapped child it is the overall approach that is important. We must take into account the other positions of lying and standing as well as sitting and different postures that the child will need to experience within these positions.

Accurate assessment and prescription are time consuming activities and are therefore expensive. This must be recognised and the procedures accorded the importance they deserve. We must make sure that appropriate equipment is provided for postural stability and compatibility with a programme of treatment and management. Accurate prescriptions for equipment are also a guide for the development of new designs.

How do we know what equipment is appropriate? How do we know that it will work? There is a light at the end of the tunnel in the form of measures which, whilst they may not be entirely objective, are proving useful. The seven levels of sitting ability described in several publications (1, 2, 3) can be used to define the seating needs of the child and, more importantly perhaps, measure the performance of the seat that is provided both immediately and in the long term. Seating systems that are able to provide the postural stability required by the handicapped child will enable the child to improve function, i.e. a correctly prescribed static seating system can benefit a dynamic child. With the correct postural stability, inappropriate postures can be inhibited and correct postures encouraged. Thus deformity that is caused by asymmetric postures, uninhibited reflexes and increased muscle tone as a result of unbalanced, unstable sitting postures should be preventable. Can a seat achieve this aim? Provided the needs of each child have been accurately assessed, the seating requirements correctly prescribed and the design of the seat carefully constructed to meet those needs then I think it can but only if part of an overall management approach.

Current research at Chailey Heritage is aimed at defining the different levels of lying ability that “normal” babies exhibit as they progress through the natural developmental milestones. When completed, the research results will form the basis of assessment procedures and prescription of therapy and equipment for handicapped children who do not have postural ability in lying. The levels of lying ability will also contribute to methods of measuring the effectiveness of this therapy and equipment and the progress that the children make. Since improvements in sitting ability are dependant upon achievement of lying ability this work will enhance current assessment techniques and management programmes. It will be easier to accurately determine the problems and how they can be overcome. For example, the seat may be providing all that is required of it but the lying board that the child uses may not be and it may therefore be compromising the performance of the seat.

The answer to the question “Special seating - is it really necessary?” must therefore be yes - but a qualified yes. Only if the child is correctly assessed, the seating requirements correctly defined and the seat designed and manufactured to meet those requirements. Seating that does not meet those requirements is not necessary. Getting it right is the challenge that we all face. If we are not successful in meeting this challenge then I think we are failing the child who requires specialised seating and preventing him from reaching his full potential.



## References

1. Mulcahy C. M. et al., (1988) Adaptive Seating for Motor Handicap: Problems, a Solution, Assessment and Prescription, B. J. O. T., 51(10), 347-352 and Physiotherapy, October 1988, vol. 74, no. 10, 531-536.
2. Nelham R. L. et al., (1988) Clinical Aspects of the Chailey Adaptaseat, Journal of Biomedical Engineering, 10, 175-178.
3. Mulcahy C. M. (1986) An approach to the assessment of sitting ability for the prescription of seating, B. J. O. T., 49, 367-368.

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## PLEASE BE SEATED

**Miss Noreen Hare, Superintendent Physiotherapist,  
Paediatric Physiotherapy Services, Nottingham.**

The title of this article has been chosen with care, as the purpose in writing is to suggest that to sit or be seated is an option or choice, dependant on ability. It is not a last resort.

The able-bodied choose to sit for various reasons: to rest, sign a treaty, play the piano, eat your lunch, bath, use the toilet etc. For the disabled, sitting becomes a mandatory posture, NECESSARY for learning, seeing, listening, transport. No one can discount the difficulties of seating people with physical disability, nor the immense amount of time and thought given to chair design, but it is unfortunately true that all too often prototypes end up in the garage rather than in the living room. This may be because the emphasis has been on seating adaptation rather than on analysis of body performance.

What is sitting anyway? Ask a group of ten or more individuals (preferably not physiotherapists!) to "sit down" and they will demonstrate an equal number of sitting positions. Refer back to motor development and, two sitting positions, encouraged and instinctively chosen by Mother (parents), emerge: sitting on a horizontal surface with both legs supported in front of the body (long sitting), and sitting with the buttocks and thighs supported at an appropriately higher level than the feet (chair sitting). In the two positions the attitude of the trunk is CONSTANT: upright or vertical, in relation to the legs, or thighs and feet. The relationship between the body and the supporting surface, however, is DIFFERENT in each sitting position.

Development, however, in both positions commences with the ability of the body to conform to or to be placed in the position, and progresses through being able to stay there, move arms, head and legs without falling, get from the position and finally assume it. Ability to move is preceded by ability to maintain, when if tested, it will be discovered that body weight falls consistently and evenly through the base of the position, i.e., the interface between the body and the supporting surface. This is initially achieved by the forward "fall" of the trunk over the legs/legs and feet.



Moreover, closer observation of motor development supports the interesting concept that sitting (whether long or chair) is the halfway house between lying and standing. On explanation: at approximately three months a child may be placed in sitting given adequate support laterally and from behind (i.e., in the corner of the settee). This same child will demonstrate considerable abilities in prone and supine lying. He is comfortable and happy in both positions, moves his arms, legs and head. In lying positions he has learnt to conform, when placed to maintain, to move body parts. His ability to sit alone, "polish" the floor with his legs, free his arms coincides with the commencement of rolling, or the ASSUMING of prone and supine lying positions. The same analysis may be made with chair sitting and abilities to stand.

In other words the ability to sit is dependant upon abilities learnt and practiced in the lying positions; and the ability to stand is dependant upon abilities learnt and practiced in sitting. A problem in standing or walking may be explained by further analysis of sitting and lying abilities; difficulties with seating should be analysed by careful investigation of prone and supine lying.

In all three positions (lying, sitting and standing) evaluation of Basic Trunk Function is essential: the ability of the trunk to first anchor and second shift body weight (antero posteriorly and inter laterally) over the base (the interface between the body and the supporting surface) of the position (HARE).

Recognition, evaluation and training of this function, (by whatever treatment method) is necessary to reduce fatigue, discomfort and the development of deformity, and, on the positive side, to release and improve ACTIVE performance.

In summary, sitting or the potential to sit must be viewed first and foremost in terms of body competence, and second, in chair design. Far from being a last resort, the characteristics of "successful" sitting should include comfort, tolerance and minimal effort, as well as the potential for movement necessary to function, and postural adjustment. Sitting should be considered an option for the disabled as well as by the able-bodied.

When asked to comment on her previous experiences with physiotherapy a young lady with cerebral palsy replied: "they wanted me to walk and when I couldn't they put me in a chair." However well intentioned the input may have been, the implication is that her treatment was focused on standing and walking abilities, rather than on building a resource of reliable physical ability, through the sequence of lying, sitting and standing.

THINK before you next sit down (why are you doing it? how are you doing it?). But even more importantly before you attempt TO SEAT another person.

Authors Note: These ideas relating to the evaluation and development of physical ability and emphasizing the essential role of the trunk as the focus of movement, both postural and functional, are all contained in the concept I have developed, and am still developing, known as the Human Sandwich.

#### **Please Read:**

1. Adaptive Seating for The Motor Handicapped - C. M. Mulcahy, T. E. Pountney et al., Physiotherapy October '88, Vol. 74, No. 10.

2. Proposals for the Improvement of The Unstable Postural Condition and Some Cautionary Notes, P. M. Pope. *Physiotherapy*, March '85, Vol. 71, No. 3.
3. Children Keep You Thinking, Henham, *Therapy* March 24 '88.

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## THE DERBY MOULDED INSERT

**Ron Salt - Research and Development Engineer.  
R. Taylor and Son (Orthopaedic) Ltd., Walsall.**

Readers who remember the Sunflower Cushion will also recall that at the start of the decade there was a scarcity of intimately contoured seating. These were only produced at Speciality Centres such as Mary Marlborough Lodge, Chailey Heritage, Salford University and Dundee.

At the close of the decade the situation is much improved with a range of modular seating available for the less handicapped. The Derby Seat or Moulded Seat Insert has already taken its place as one of the few means of seating the more deformed patient.

The strength/weight ratio of the Moulded Seat Insert gives it a considerable advantage especially where a minimum of maintenance is required. Being constructed from closed cell polyethylene for the lining (Fig. 1a), high density polyethylene (polythene) for the casement (Fig. 1b) and tubular aluminium for the wheelchair interfacing frame (Fig. 1c, d and f) keeps weight to a minimum. The rigid construction, although a disadvantage for post supply modification, gives a high degree of structural integrity.

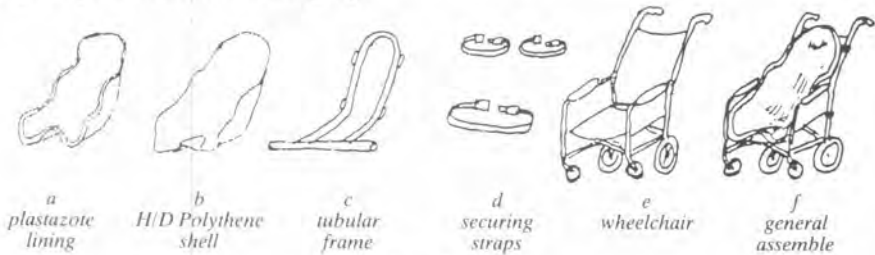


Fig. 1

### The Assessment Process (assessing the patient's needs)

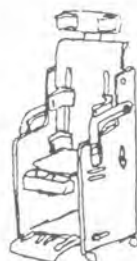
Assessment Chairs are increasingly becoming available. These can be used, in the first instance, in conjunction with the levels of sitting ability to achieve the correct type of seat for the individual. Assessment Chairs range from simple to sophisticated. At some Development Centres existing seating systems such as the Cloudsley Chair (Fig. 2) are being used to ascertain the suitability of this type of arrangement for new clients.

Other parameters are also important and it is necessary to discuss the seating requirements with all involved in the daily living of the patient.

**The Past.** What has been tried? Was it successful in any aspect? Why was it discontinued?

**The Present.** What is wrong with the present system? How can it be improved?

**The Patient.** Pressure sore history or tender spots should always be discussed. Bear in mind that unless ventilation is introduced a very humid micro climate at the interface of user and seat can result.



*Cloudsley Chair*

Fig. 2

The client's contribution towards independent sitting should be taken into account when deciding the amount of support to be given. Too much support promotes laziness but too little results in premature fatigue (Fig. 3a). Unlike the Reshaping Matrix it is very difficult to add on later.

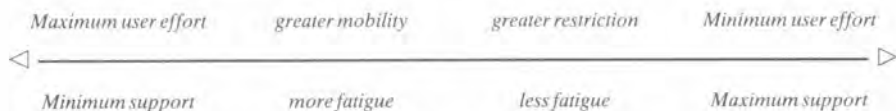


Fig. 3a

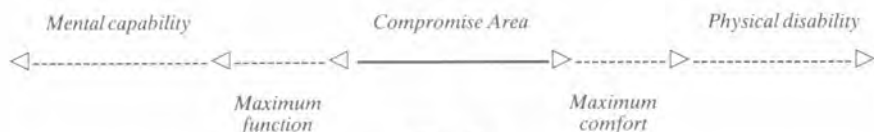


Fig. 3b

**The Parents.** The requirements of the secondary user are important for the encouragement of maximum seat usage. Useful information is width of doorways or size of lift in the home, transportation in a family car or to school, one person/two persons lifting and how. Top and bottom lifting requires the seat back to be as low as possible, a factor which is not affected if the two handlers lift side and side. A single person transfer requires the side nearer the handler to be as low as possible without losing necessary support or if one person lifts from the front a radiused edge to the seat in the popliteal fossa area is a useful inclusion.

**The Place.** The ideal venue is difficult to define and not always convenient for all parties concerned. Seating Clinics are coming more into fashion because of the availability of Medical Officers, Nurses and Technical Officers who can give advice; such decisions as wheelchair make and model can be determined and ordered on the spot, resulting in minimal delay in the supply of the seat.

Many of us are still learning about Seating Clinics but it would be worth taking along a favourite toy, a cassette tape of familiar voices or music which can be played to give a more homely atmosphere to the setting. It should be borne in mind that any sound which may induce spasm in the patient should be put on a separate cassette since it is useful to have a recording to cause excitement which can be

played at the appropriate time since a Moulded Seat must cater for every eventuality.

In short, it is ideal to have everyone involved together in a place familiar in sight and sound to the patient who has just received physio and hydrotherapy, the people who can generate excitement waiting in the wings whilst the dinner lady prepares the meal for a feeding trial, a school desk or table to determine the height of the seat, computer keyboard and electric wheelchair control box to make sure arm movement is not restricted from carrying out these functions.

Then mum, main carer and keyworker can try on a coat just to make sure everyone is satisfied (see Fig. 4a), and an understanding ambulance driver, if possible, who is not waiting to confiscate the patient to take him or her home.

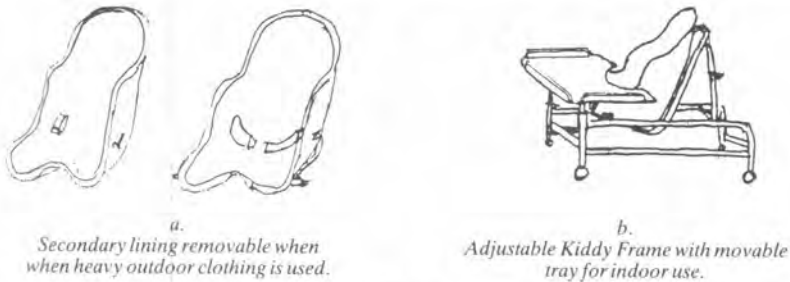


Fig. 4

**The Position.** The pelvis should be located as symmetrically as possible but this can be influenced by the extent of spinal curvature and hip windsweeping and is often the mean position between obliquity and rotation. A comfortable position allowing maximum function should be the objective but this is not always possible and the assertion of either the intelligence or deformity may move the compromise area to suit the more important requirement (Fig. 3b).

Degree of hip flexion can be affected by the patient's medical condition with maximum hip flexion being used for extremely hypertonic patients and minimum flexion for severe kyphoscoliosis where there is a risk of the lower thoracic rib cage impinging on the pelvis (Fig. 5a and b).

Function of the seat and the patient's requirements can determine the position of the seat in the wheelchair or on its base (Fig. 5c and d; also Fig 4b).

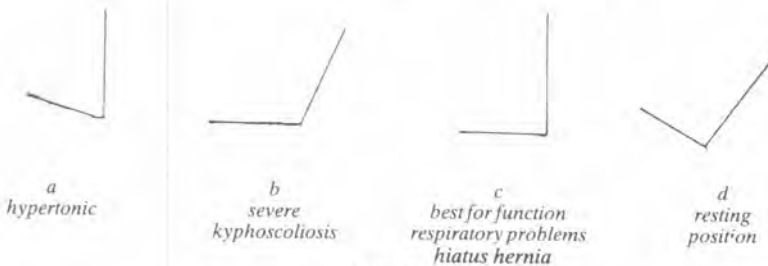


Fig. 5

Correct weight distribution is important. Sacral sitting should be avoided and if possible an orthogonal base usually double thickness should be considered with maximum support in the load bearing areas to be just forward of the gluteal crease.

**The Production.** Vacuum consolidation is used to obtain an impression of the client appropriately positioned in the bead bag. This is the practical part of the Assessment and Positioning process and since it is reversible a final shape can be achieved and held firm by increasing the vacuum applied to the bag (Fig. 6a).

A plaster of paris cast is then taken to produce a positive replica of the client usually from the popliteal fossa to C7 or with head support included. In some cases below the knee is also moulded (Fig. 6b).

By relaxing the bead bag the cast is then removed and reinforced to withstand the forces during the vacuum moulding process which can amount to 10 tonnes on the larger casts.

Both the seat lining and the shell are thermosoftening materials which are heated and draped over the upturned cast (Fig. 6c), then pulled to the final shape by vacuum (Fig. 6d).

After cooling the laminated inner lining and outer shell is taken from the cast and the periphery cut to the approximate shape (Fig. 6e).

The patient is then placed in the seat for an intermediate try-out to determine the final edge of the mould and the optimum position in the wheelchair or base (Fig. 6f). A minimum of a waist strap is required but in some cases more retaining straps are used. For aesthetic reasons it is better to see the client rather than the seat.

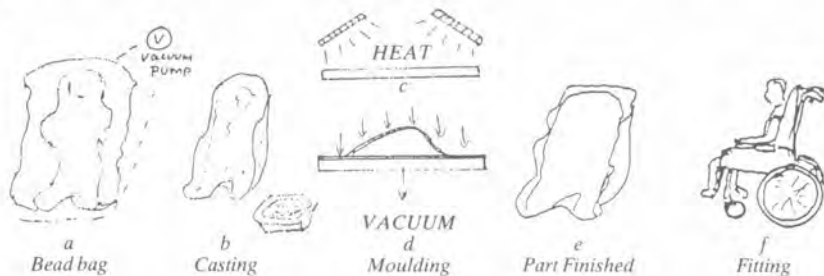


Fig. 6

The final finishing is carried out by workshop technicians when the seat is made to look as attractive as possible and the interfacing frame made to the wheelchair dimensions is securely fixed (Fig. 7a).

A stability test is obligatory to meet the statutory requirement of the Disablement Services Authority (Fig. 7b). A Certificate of Compliance is issued with every seat as evidence that this has been carried out.

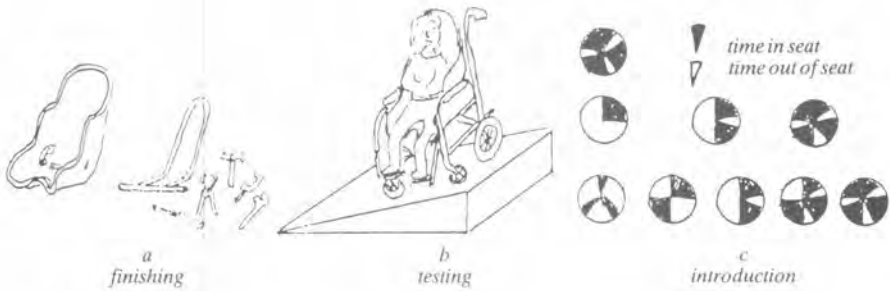


Fig. 7

Introducing a client to an intimately contoured seat for the first time may be a little strange. It can be immediate acceptance for prolonged periods (although a short respite in a different position is necessary) alternatively a gradual beginning to the new posture may be necessary, Fig. 7c is a guide only.

**Prospects for the future.** Computer technology is already being used in some countries to translate the bead bag shape into a finished seat. The vacuum consolidated impression is digitized and this information stored on computer tape or disk. One feels that as Assessment Chairs develop they could be computer-linked and the patient's requirement recorded in this way.

More resilient materials could be on their way with the possibility of dynamic seating being available.

Experiences being learned with other forms of seating could be useful in the intimately contoured scene.

Looking back over the past decade we see that a lot of advances have been made. What do you think of the prospects for the future; are they pipe dreams or possibilities?

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## SETTING UP A SEATING SERVICE

**Dr. I. D. Swain Ph.D., Principal Medical Physicist,  
Dept. Medical Physics, Odstock Hospital, Salisbury.**

Recent surveys in Dundee and Wales indicate that out of every million people there are nearly 700 who require special seating, 70% of whom are children. This gives a national figure of approximately 27,000 children and 11,000 adults. Therefore to provide adequate, let alone optimal, seating for all in need is clearly a major undertaking. For a small District Health Authority such as Salisbury with a population of 130,000 this means some 60 children and 25 adults to be seen. This was the initial problem we decided to address. We decided to manufacture the seats 'in house' wherever possible so that the time taken for a seat to be made was reduced and the user and family would build up a relationship with staff concerned. If there were any problems then a quick, flexible backup service would be available.

Our initial investigations centred on the Paediatric demand. We undertook a detailed review of the literature to increase our knowledge of the principles of seating and posture control and to find out what was available, both commercially

and purpose made. As a result of our enquiries we decided to begin with a limited range of seating systems. This initially consisted of 'Foam and Wood' and the Rookwood bead and Modular seats, later extended to include the Chailey Adapta Seat and the Matrix system. With this range we felt that we would be able to solve the great majority of problems for children, if not for adults. A number of visits were arranged to centres of excellence such as Chailey Heritage, Rookwood Hospital, Cardiff and Mary Marleborough Lodge, Oxford and three members of staff (a physio, OT and Rehabilitation Engineering Technician) attended a week long course at Rookwood. In addition the Rehabilitation Engineering Technician spent a further two weeks at Rookwood to become more proficient in the technical details of manufacturing the bead seat. As a result of this we became the first hospital other than Rookwood to be included on the Disabled Services Authority (DSA) list of suppliers of the Rookwood seats.

At the same time we began to improve relationships with our two local DSA's. As Salisbury is half way between Portsmouth and Bristol our patients are also divided between the two. This can be politely expressed as being less than ideal. However, this is certain to improve after January 1989 when all our patients come completely under the Portsmouth centre. A good relationship with the DSA is essential as not only does it enable one to tap into their resources and expertise, but until devolvement in 1991 all funding for special seats will be controlled by the DSA. What happens thereafter remains to be seen. However, from January 1989 the Senior Medical Officer from Portsmouth is going to come to Salisbury on a regular basis to assess those in need of special seating.

This, therefore is the background work completed. The initial technical knowledge has been gathered and the most important link, that with the DSA, has been formed. What remains now is to organise and resource an efficient service to hopefully overcome all of the problems associated with the old system of sending patients to remote centres to have seats fitted by commercial contractors. The key to an efficient service is communication. By its very nature a seating service involves Paediatricians, Physical and Occupational Therapists and Biomedical Engineers and Technicians. However, this is just the tip of the iceberg, for in addition to the DSA, Social Services, Community Therapists and Educationalists are also involved. Meetings are therefore inevitable and a great deal of thought has to be applied to their organisation so that the appropriate people are present when decisions are made. It is all very well for the hospital staff to decide what they are going to do, but unless they discuss their ideas with other parties involved a great amount of time can be wasted and bad feeling engendered.

One of the initial tasks we set was to make a list of all handicapped children in the district. We included the type and source of provision of all seating and aids they possessed. One group of children we initially failed to include in our list were those away at boarding schools. The only reason we stumbled upon them was that such a boy was admitted to the Plastic Surgery Ward at Odstock with a grade four pressure sore due largely to inadequate seating. As a result, this 15 year-old boy with Spina Bifida had to spend four months in hospital and have two major skin grafting operations including a rotation flap. We estimate that this cost of NHS in the region of £15,000. We have now supplied him with a foam and wood seat, following the principles developed at Chailey Heritage at a cost of £30. At present he has been free of sores for three months and we have had six seating referrals from the same



school, which, although not in our district we will try and help. Since this time we have found eleven such children attending boarding schools as far away as Yorkshire.

In order to overcome problems such as this we have regular monthly meetings where an agenda is prepared and distributed to all concerned. Names of children to be discussed can be suggested by any of the participants including those in the community. A basic nucleus of staff attend all meetings, consisting of the head paediatric OT and Physio, the physiotherapist working with the local handicapped schools, a paediatric consultant, a principal bioengineer and rehabilitation engineering technician. At each meeting approximately six children are discussed and any other people involved, both in the hospital and in the community, invited to attend. Having such a wide range of people from many disciplines ensures full and frank discussion! Despite this, agreement is usually reached, but it is not unknown for meetings to over-run somewhat. General organisation and strategy is also considered. The result of these meetings has been to create a TEAM who work together and for the majority of the time to actually know what other members are doing and more importantly, what they are trying to achieve.

Once we have determined that special seating is required, the next stage is to see the child in the clinic to determine which type of seat is most appropriate. However, before arranging an appointment it is essential to contact the local DSA Medical Officer and arrange for him to be involved. If not then it is impossible to obtain funding through the DSA. If you do not want to use their experience, then you can work independently, but be warned, a number of seating systems can cost between £500 and £1,000 even if you are able to supply the labour. The multidisciplinary nature of these clinics is their strength and our clinic is staffed by the Medical Officer, Bioengineer and Rehabilitation Technician and most importantly the key therapist for that child and one of the parents. The key therapist can either be a physio or an OT and often it is better to have both present as once a child is sitting in a better posture their functional ability is increased. Special assessment forms have also been produced so that not only is the design of the seat to be made written down in black and white to prevent later arguments, but it is essential to keep records both for your own information and for the requirements of the new 'Consumer and Fire Safety Regulations'.

Finally comes the easy part, actually manufacturing the seat. This can often be quite a lengthy process and hence can be distressing for the child. Therefore it is best to have as few people involved as possible i.e. the key therapist and the rehabilitation technician. It is now that you can see the benefit of all the preceding work, as hopefully a seat will be made which fulfils all the specified criteria. If not then you only have yourselves to blame. This is the advantage of doing everything 'in house' for you know immediately if the seat is going to work as it is fitted with the child present. It is not based on a cast taken by one fitter, to be made by a technician who has never seen the child, to be sent through the post some twelve weeks later. Is it any wonder that such seats often do not fit satisfactorily?

The really difficult part is finding the resources to get the whole system off the ground. In Wales they are in the process of setting up a number of seating centres based upon one Senior Therapist, a Senior Bioengineer and a Technician. Such a programme of development does not just happen overnight, it is the result of many years hard work. Firstly, you have to convince the powers that be that the problem

exists and that solutions are available. Secondly, you have to get them to provide adequate funding.

The best way to proceed is to show what it is possible to achieve with existing resources and then keep chipping away to improve facilities. Contact your local Medical Physics Department and ask for technical help. If you shout long and hard enough they will eventually respond. Then with them, review the literature and go to visit specialist centres. Finally, do not be frightened of trying. The early attempts might not be perfect, but at least you will know they failed and be able to learn from your mistakes. If you need advice pick up the phone and ask. Remember, the technology does exist.

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# OUTLINE OF CHANGES IN THE WHEELCHAIR SERVICE

Patsy Aldersea, Therapist, DSC Kingston-upon-Thames, Surrey.

## Background to Change

Until May 1987 the DHSS was responsible for the provision of wheelchairs through a network of ALAC's (Artificial Limb and Appliance Centres).

General dissatisfaction with the service resulted in the Government setting up an independent enquiry under the Chairmanship of Professor Ian McColl.

## Transfer to the Disablement Services Authority

In 1986 the McColl report was published. This criticised many aspects of the service, but also made a series of recommendations.

The main recommendation proposed the setting up of a new authority with its own budget and management board, to take responsibility for provision of artificial limbs and wheelchairs and accessories. Having given the report some consideration, the Government announced that from 1 April 1991 the ALAC service would be integrated with existing health services in the NHS.

During the interim four year period responsibility would be transferred from the DHSS to a special health authority, namely the Disablement Services Authority. They would have three main responsibilities.

1. To run the service during the transitional period.
2. To build upon the improvements already taking place in the service.
3. To oversee the planning for the eventual transfer into the NHS.

The Chairman of the new Authority is Lord Holderness, the Vice-Chairman is Professor McColl.

To ease the transfer into the NHS, fourteen DSA regions have been created with boundaries identical to the Regional Health Authorities. Each region has a new Regional Manager with responsibility for their own budget covering staff, day to day running of the services, and equipment, as well as planning for the 1991 transfer.

## The DSA Therapists

Apart from the change of management, the McColl report emphasised the importance of wheelchair assessment being part of total rehabilitation and identified the therapist as playing a major role in assessment and training of the user.

Previously therapists had not been employed in the wheelchair service, but the DSA appointed three therapists in experimental posts for a period of two years. The therapists, based at Newcastle, Exeter and Kingston, have individual job descriptions but united aims which are:-

1. To evaluate the role of the therapist in the wheelchair service.

2. To improve liaison between Centre staff, therapists, other professionals, users and all concerned with wheelchairs.
3. To improve the standard of wheelchair assessment, prescription and provision.

They also play an important part in advising and planning for the 1991 transfer.

### **Training for Therapists**

The emphasis on involvement of therapists highlights the urgent need for training. Many therapists already take part in wheelchair assessment, but the level of knowledge and expertise is variable and depends largely on acquired experience. Lack of training coupled with absence of up-to-date information on equipment and poor liaison with ALAC's (now DSC's), has been a major cause for poor prescription and client dissatisfaction. This is particularly so with the more severely disabled and complicated cases. Clinics run at the Centres have aggravated this problem with assessment based more on size than need and ability.

Some training initiatives are already under way in different parts of the country. Now the DSA has provided funds to collate and extend these efforts. A National Training Group whose Chairman is Miss Catherine Van De Ven, Physiotherapist, and Key Worker Mrs. Ruth Tyerman, Occupational Therapist, is working to provide learning materials, aimed primarily at therapists but suitable also for DSA staff or any interested persons. The final package will be distributed in early Autumn 1989 to Regional Managers, for use with local therapists and staff at all levels in the service.

### **Regional Plans**

Each region now has the opportunity to plan a service suited to local needs, providing it keeps within a fixed budget. There are no additional resources available for this major reorganisation. Regions must therefore examine existing services, whether Statutory or Voluntary, and build upon these and any relevant voluntary initiatives. Differences are bound to develop as regions may spend their budgets as they wish. This may mean change of standard equipment in some cases though given the limited resources and existing NHS structure, some similarities are bound to remain. Proposed plans for the South West Thames region are an example of how things may develop.

Following discussions with a wide variety of groups and individuals, including therapists and users, South West Thames initially considered three levels of assessment. As discussions continued and pilot schemes were set up, it became obvious that Level 2 was not viable and although it is briefly described below, it has been integrated with Level 1.

**Level 1.** Assessment will be for the majority of users. Wherever possible assessment will be by a therapist as part of total rehabilitation. It must include not just functional assessment but all aspects of the client's life and needs whether social, environmental or psychological. It will cater for all clients requiring a wheelchair without any modification though including accessories or pressure cushions if relevant. Assessment will be carried out by the client's own therapist in

their treatment environment whether this is school, home or hospital.

**Level 2.** Will be integrated with Level 1 at district base. It will cater for clients requiring modifications, power chairs or those with more complicated problems. Technical Officers, who will be based at a Regional Centre, will be available for either clinics or for individual visits to see clients requiring modifications with the Therapist. Equipment for these levels of assessment will be available for each district. Depending on existing facilities, districts will decide whether or not to combine paediatric and adult facilities, though most plan for paediatric clinics to be held in Special Schools or units. Technical Officer visits can be arranged either on a regular or casual basis as appropriate.

**Level 3.** Will be a regionally based centre with a specialist team offering advice and assessment on special seating (for wheelchair users) with facilities to assess associated problems such as switches and controls as well as mobile arm supports. South West Thames plan to have a main Regional Centre with a satellite seating clinic at a second centre.

At the moment the plan is to hold separate clinics for children and adults. It is hoped that the paediatric clinics will be based in existing childrens centres so that seating assessment is not divorced from other needs.

Emphasis will be placed on the importance of full assessment of the child and all their needs including social, as well as postural, functional, environmental and psychological before referring to the special clinic. It will be the responsibility of the child's therapist to have established priorities by consulting with all concerned including the mother, teacher or carer.

The regional plan is based on assessment levels but it must be remembered that good assessment is wasted if there is absence of training for user and carer in the handling and care of the equipment. This is a feature frequently lacking in the present service.

### **Other Considerations**

A wide number of options are being considered in all regions in connection with casual users, loan schemes, disability centres, self referral or visits without appointments and so on. Money tends to be the limiting factor. Users and carers view the change with a certain amount of reservation. Active wheelchair users welcome the move away from an impersonal centre to more local involvement. The majority welcome more therapist involvement providing there are sufficient therapists who are adequately trained. Today's users are looking for a good assessment, knowledgeable advice but opportunity for greater choice whenever possible.

### **Summary**

After a period of 71 years, the transfer of the wheelchair service into the NHS in 1991 is a major operation.

During the interim period the Regional Managers have an enormous task to reorganise existing administration to fit into the NHS structure, as clients files are transferred to District Health Authorities. New contracts are being drawn up with

Approved Repairers in an attempt to improve both the delivery and repair service to users. Ordering and supply is being transferred from a central store for national use to regional levels.

The change is bound to cause some disruption and even though attempts are being made to keep it to a minimum, there may be times when users, many of whom are unaware of the changes as yet, will be frustrated by delays and other problems.

In the future, user satisfaction will, to a large degree, depend upon the efficiency of therapists to assess and prescribe realistically and also to ensure good training for user and carers in the handling of equipment. By having easier access to assessment equipment and up-to-date information as well opportunity for training, it should enable therapists to offer a better service to their client. Availability and range of equipment will depend very much on size of budgets and how they are handled, but better assessment will hopefully eliminate some of the present wastage caused by provision of inappropriate equipment.

All therapists involved with either children or adults requiring wheelchairs should, for the moment, make sure that they are aware of future plans and contact their Regional Manager at the DSC if they feel any special needs are being overlooked.

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## **FELIX EXERCISE CHAIR**

### **Research Movement Therapy Equipment**

**Mrs. Jutta Tanner, Superintendent Physiotherapist, West Wickham**

The Felix Chair's development originates from therapeutic techniques for upsetting midline stability to stimulate equilibrium reactions. It became a project of the Diploma in Design for Equipment for Disability at the London College of Furniture (1986/7).

The feature which marked the chair as extraordinary was the employment of a 'gimbal' system of rings and pivots. The chair is fixed to the inner ring which moves by free pivoting of the gimbals (inner and outer ring) through the horizontal plane of the vertical (10 - 35) in all directions. It is operator controlled until the child has gained some postural control and is in charge of it's own movement. This is done by maintaining horizontal position of the body if the centre of gravity is displaced by counter-balancing when the chair moves. The movement provided by the gimbal enables the child to improve his/her level of postural control.

It was felt necessary to compare this concept with those already on the market, and, to this end, a Market Research was undertaken and a Questionnaire designed. The chair was tested over a four week period, the subjects being between six months and two and a half years (cerebral palsy and mental handicap).

Every child improved in at least two postural response directions and one in all four charted.



## **SELECTIVE DORSAL RHIZOTOMY - A TOOL FOR USE IN THE REDUCTION OF SPASTICITY IN CEREBRAL PALSY**

**Mrs. Eva Bower MCSP Research Fellow, Faculty of Medicine,  
University of Southampton**

The neurosurgical procedure of selective dorsal rhizotomy in selected cases of cerebral palsy has been pioneered by Warren Peacock and colleagues in South Africa and California (\*1). It is a procedure which is being increasingly used in centres all over the U.S.A. It has been evaluated in forty-five patients by Leslie Cahon, Jacqueline Perry and colleagues in California (\*2) and shown to decrease spasticity which frequently results in an increase of range of movement especially around the hips and ankles with consequent functional improvement especially in sitting, half kneeling and gait whilst not causing a significant sensory loss, but underlying muscle weakness can be a post-operative problem. It does not, however, eliminate the primitive motor patterns so that abnormal movements, tonic reflexes and balance problems persist.

Children found to be most suitable for this procedure are those aged three years and upwards suffering from spastic diplegia or mild quadriplegia with good motivation and the potential ability to be ambulatory, if spasticity were reduced. Compliance with a vigorous pre- and post-operative physiotherapy programme is a requirement for a successful result. Children found to be most unsuitable for this procedure are those with significant damage to the basal ganglia or cerebellum (dystonia, athetosis), low cognitive ability, orthopaedic surgery to more than one joint or a severe scoliosis.

An incision is made along the centre of the lower back exposing the spinal cord and the nerve roots in the spinal canal. The dorsal nerve roots which transmit sensation from the muscle to the spinal cord are divided into a number of rootlets. The dorsal nerve rootlets causing spasticity are identified by examining the electromyographic responses and those causing the spasticity are then cut leaving the normal ones intact. The surgical procedure takes about five hours.

Following surgery the child remains in intensive care for at least twenty-four hours before being transferred to the paediatric ward. Typically the child remains on bedrest until the sixth post-operative day. On the sixth day the child will be allowed to sit up with full trunk support for about one hour. Gentle mat exercises will be commenced at this time including gentle stretching, rolling, bridging and prone propping but great care must be taken with trunk flexion, extension and rotation. On about the tenth day weight bearing will be commenced. Care must be taken with hamstring stretching and trunk movements into the extremities of the ranges of movement. No restrictions are placed on the child's own movements from about the twelfth day onwards. The child is discharged at approximately two weeks post-operatively. Children may require later additional orthopaedic surgery for fixed joint deformities.

The pre-operative physiotherapy assessment should include:-

- a) Spasticity - on the Goff scale.
- b) Range of movement - using a goniometer.
- c) Muscle strength - on the 0-5 Oxford scale.



- d) Functional activity - including the ability to move from one position to another.
- e) Gait analysis - in a laboratory, if available.

The pre-operative physiotherapy treatment should include:-

- a) Exercises to increase the joint ranges of movement of the trunk, hips, knees and ankles.
- b) Exercises to strengthen the trunk, hip, knee and ankle muscles.
- c) Explanation and demonstration of the post-operative programme.
- d) Confirmation that the necessary equipment is readily available and useable i.e. wheelchair, adapted chair, toilet seat, roll, stool, large ball, standing frame, posterior walker, crutches etc.

Following discharge long term intensive physiotherapy is required. The child should be seen 3-5 times a week for 8-12 months.

Community physiotherapy management should include:-

- a) Training in head body and limb alignment in sitting, standing and walking.
- b) Training in balance reactions in sitting, standing and walking.
- c) Exercises to increase muscle strength.
- d) Exercises to increase range of movement.
- e) Training of reciprocal and isolated movements as required for efficient functional purposes.
- f) Functional activities including the ability to move from one position to another.

Two important points need to be taken into consideration when suggesting children for selective dorsal rhizotomy namely a) functional progress reaching a plateau due to spasticity and b) good underlying muscle strength.

If selective dorsal rhizotomy continues to be found to be a successful tool in the reduction of spasticity in cerebral palsy it is to be hoped that its use would be extended to include the severely handicapped spastic quadriplegic child where it would be useful to prevent deformity and facilitate ease of management in daily living activities such as toileting, washing and dressing.

It will be very interesting to hear of any centre in Great Britain where selective dorsal rhizotomy is being used to reduce spasticity in cases of cerebral palsy. It is important that if and when this procedure becomes available in Great Britain physiotherapists are included in the pre- and post-operative assessment as well as treatment and that they are enabled and prepared to evaluate it as a treatment tool interwoven with other strategies, orthoses and orthopaedic surgery.

I should like to thank Dr. B. G. R. Neville for introducing me to this subject (\*3) and I should also like to thank the numerous American physical therapists with whom I have discussed this subject for their information and advice.

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## **DOES COMMUNITY PHYSIOTHERAPY TREATMENT REDUCE THE FREQUENCY OF HOSPITAL ADMISSIONS OF CHILDREN WITH CYSTIC FIBROSIS?**

**Kate Richardson, Senior II Physiotherapist, Sydenham Children's Hospital.  
Source: June 1987.**

This study commences by describing the pathology of Cystic Fibrosis and outlines of treatment as followed by Sydenham Children's Hospital.

The study took place from October 1986 to March 1987 on thirteen children with Cystic Fibrosis living within the southern end of Lewisham and North Southwark Health Authority. All the children were under the same consultant except for one.

The main aims of community physiotherapy were outlined as follows:-

- Reduction of strain on family life.
- Progression of treatment regimes in familiar surroundings.
- Advice - as and when problems arise.
  - to enable earlier hospital discharge.
  - to prevent hospital admission.
- Provision of regular links between home and hospital.

A description of the physiotherapy service follows - the Senior II spending twenty-one hours per week in the Community 65% of her time being spent with C.F. children.

Tables outlining the population of the study and their pulmonary status at annual assessments are included. The majority of the candidates were found to be too young for formal testing. The frequency of hospital admissions are also tabulated.

A questionnaire - which is printed in full - was sent to the parents for the thirteen children involved in the study (two sisters were included), nine replies were received.

Outcomes of the questionnaire included parents' expectations of the service were:-

- to receive support, advice, treatment and reassurance.
- faster lines of communication with the hospital.
- less disruption to children's resolve.

The frequency of treatment was on average once a week and the parents were able to adjust family life to the physiotherapist's visits.

Parents much appreciated the support they received and said they felt more confident knowing the physiotherapist was coming - no one else visited the home on a regular basis. All parents - except one - felt the continuity between hospital visits was much improved.

Five parents felt the child was much happier being treated at home.

From the child's point of view the parents felt, treatment at home was beneficial because of less disruption and said they felt the pressure on the child was increased at the hospital in strange and formal surroundings. The visits of the physiotherapist were enjoyed and appreciated - especially explanations being given in a non-medical atmosphere.

The study concludes that it was difficult to evaluate whether hospital admissions had been reduced because of the small numbers involved but the parents had greatly appreciated the support and reassurance in familiar surroundings by a named person. It had also been useful to monitor poor hospital attenders.

## QUESTIONNAIRE RELATING TO C.F. STUDY

1. Had you ever thought of community physiotherapy for your child?
2. What did you expect from community physiotherapy?
3. How often do you see the community physiotherapist?
4. Was this regular enough? If not, state why.
5. Were you able to vary the time she visited to suit you and the family?
6. Do you feel there is better continuity of care between hospital admissions since there is a community physio?
7. Would you have preferred to see the physiotherapist at the hospital instead?
8. Does anyone else from the hospital visit you at home? Yes/No  
Social Worker                      Health Visitor  
Dietician                              District Nurse                      Others  
(state whom)
9. Do you feel you have been able to cope better knowing a physio is coming to visit?
10. Do you feel the support from the community physiotherapist has speeded hospital discharge?
11. Do you feel you spend less time at the hospital since the physiotherapist has visited you at home?
12. Do you have to phone the hospital less since the physio has visited?

13. How many people help with the physiotherapy at home?  
If more than one, state whom: Mum  
Dad  
Brothers  
Sisters, etc.  
Grandmother  
any other
14. Do you feel hospital admissions have been delayed since the community physiotherapist has visited you?
15. Do you feel hospital admissions have been prevented since the community physio has visited you?
16. Is the child happier with the physio at home?
17. Does the child co-operate better with the physio at home?
18. Does the child get iller before hospital admission?
19. How many school days has your child missed due to chest infections?
20. In the past if you had any problems with physiotherapy, what did you do?

ANY OTHER COMMENTS

## IN SEARCH PAPERS

You will remember Noreen Hare encouraging us last year to put pen to paper for this Newsletter. (May 1988 edition).

We want very much to hear of therapists who have conducted studies, recorded successes, found new innovations, and discovered for themselves ways and means of evaluating the work they do.

As Noreen suggested, "this 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."

The questionnaire above is an interesting one, and the Editor would be pleased to know if any other such questionnaires have been used by therapists, particularly ones which enquire of parents the value they have found in the physiotherapists' treatment and management of their child.

## THE HARROGATE HEALTH AND FITNESS PROJECT

Mrs. Mary Harrison, Senior Physiotherapist, Harrogate C.D.C.

Once a month we hold a clinic for our Out-Patient Cystic Fibrosis sufferers at which there are representatives of all interested disciplines. This was instigated by the physiotherapists eighteen months ago, who is joined in these clinics by the Paediatric Consultant, S.H.O., Nurse, Dietician and Social Worker. In the past any C.F. sufferer, whether a child or young adult, only attended the ordinary Paediatric Out-Patient clinic and therefore there was no opportunity for the patient to be assessed collectively by all of those people involved in treatment. This meant that their overall management tended to be fragmented and at times inco-ordinated.

One day, whilst discussing possible physical activities for the C.F.'s to try, one of our young teenage boys mentioned that it had always been his ambition to ski. However, he thought that because of his condition this would never be possible. The challenge was on!

After consultations between colleagues from the monthly clinic the idea of a ski holiday for all of the C.F. sufferers in the area was hatched. There was a terrific response from both the parents and the sufferers. Everybody was fired with enthusiasm for the trip and in October 1987 a fund raising scheme commenced, namely the Cystic Fibrosis Health and Fitness Project. By the end of January 1988 over £3,000 had been raised from various functions and from donations by local trades people.

The choice of venue for the holiday was Glenshee in Scotland. This was decided after thoughtful consideration was given to such possible problems as the need for quick medical help, easy access to home for any emergencies, and above all the fact that this was an experimental holiday. If it succeeded, there would be plenty of years ahead to venture further afield.

Five nights accommodation were booked at the Angus Hotel in Blairgowrie during the half term in February 1988. The hotel was chosen for its excellent facilities, including an indoor swimming pool, sauna and solarium and squash courts nearby. The party consisted of five children with ages ranging from 9-14 years and four young adults. A further three young adults unfortunately had to cancel at the last moment for various reasons. Five staff, three of them physios accompanied the group.

The aims of the project were as follows:

1. To improve lung function and well being.
2. To improve self-esteem and gain confidence.
3. Encourage integration with peers through group activities.
4. To reduce dependence on their families who can sometimes be over protective. In addition, to enable them to handle their physiotherapy regime (Forced Expiratory Technique).
5. To enable the therapists to have more time to assess the C.F.'s needs, to get to know them, and to become better acquainted with their problems and fears.
6. Alleviate the sense of isolation by being with fellow sufferers and to be able to exchange ideas and talk through hidden worries and problems with them.
7. To realise that they can take part in 'normal' sporting activities and therefore be more willing to accept such opportunities in future.

We were all first time skiers but within three days we had graduated from the nursery slopes to the 'proper' runs. In many instances the C.F.'s showed the physiotherapist how it was done. A great time was had by all and the five days went far too quickly. Nobody wanted to come home. The holiday had been an overwhelming success, and there had been no accidents or illnesses. It was generally agreed that the C.F. sufferers had put the supposedly healthy adults to shame with their degree of fitness and determination to succeed.

By the end of the trip all our aims had been more than successfully achieved. The atmosphere and commitment of the whole group had been excellent from day one and as we left the hotel for our return journey, I was told to rebook for next year.

As mentioned previously the long term goals of our holiday had been to achieve an overall improvement in lung function and well being and to integrate the sufferers into society by engaging them in activities that they did not believe were within their capabilities.

A measure of the success of the holiday can be seen from the following achievements:

1. Peak flow readings were all up at the next clinic.
2. They had all gained weight.
3. A reduction in hospitalisation needs for all who went on the trip.
4. F.E.T. procedure is now well established.
5. One boy of ten years took up squash following his trip and within a month had won the club's end of season under twelve Championship. He is still playing regularly and going from strength to strength. During the summer he also took up tennis.
6. Three have joined local gyms and are following individual exercise programmes.
7. Friendships have grown within the group and they socialise regularly. Before the trip there was virtually no contact between the sufferers or between parents.
8. At the monthly clinic they can now communicate more easily with each other.
9. There has been a highly successful 'get-together' and meal.

The Health and Fitness Project for C.F. sufferers has continued to develop and grow. There is now not so much need for a large physiotherapy input as the sufferers have realised that they are not different and are able to cope with the demands of everyday life. They all agree that the Health and Fitness Project has been of great social and physical benefit to them. It is a joy to see the young adults mixing with and encouraging the children (and their parents). It has certainly meant that in the Harrogate area, the C.F. sufferers, their families and their medical management team are well integrated and better informed. The benefits of the scheme continue to develop and flourish.

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## SUMMARY OF NATIONAL COMMITTEE MEETING 14.10.88

The Chartered Society of Physiotherapy had requested two members of the APCP Committee to attend a meeting on 1st November 1988 to discuss the hosting of the Eleventh International Congress of the World Confederation for Physical Therapy. Representatives from most of the Specific Interest Groups have been invited to discuss ways in which they may help the CSP in their hosting role and in arranging workshops.

The Chartered Society have also requested comments from the Committee on the Clinical Interest Groups Conference held in Stoke in May 1988. Four members of the APCP National Committee attended this weekend and are to prepare their comments on the success of the weekend and their ideas as to the future structure of such conferences.

Under the Treasurer's Report the question of introducing a Direct Debit scheme for membership fees was discussed. It was decided on balance that the disadvantages of setting up such a scheme outweighed the advantages and therefore it would not be introduced.

The Editorial Board Sub-Committee has, at present, one vacancy which it is hoped will be filled shortly. Themes for the quarterly Newsletters have been decided up until February 1990.

The Post Registration Education Report was given by Mary Clegg who attended the Physiotherapy/Occupational Therapy Development Group weekend in Bristol in August. The purpose of this group was to examine how the professions can work together to serve the short and long term needs of particular client groups. Specialist areas of neurology, paediatrics and the elderly were specifically discussed and the outcome of this meeting will be jointly published by the CSP and the College of Occupational Therapy. Mary also attended a meeting on 20th September 1988 of the NHS Training Authority which is considering setting up a multi-professional training course in Community Paediatrics for Physiotherapists, Occupational Therapists, Speech Therapists and Educational Psychologists. The Specialist Interest Groups in each discipline are asked for comments on this and committee members were asked to send their comments to Mary Clegg. Mary also gave feedback from the annual Post Registration Education Training Meeting for course tutors, leaders and assessors which was held at the North London School of Physiotherapy. There were suggestions how Post Registration Education could be structured in relation to CSP policy and this included the possibility of a distance learning package as a baseline introduction to various speciality areas. The committee discussed at length the draft document produced by the CSP on "Provision of Therapy by Education Authorities". Strong feelings were expressed by some committee members that it denigrated the specific handling skills learned by physiotherapists by implying that treatment could be carried out by others. However, the need for appropriate use of physiotherapy resources was stressed and it was thought that assessment and review by the physiotherapists, with management programmes carried out by carers would ensure this. There was also



discussion on the problems of differing management accountability which may arise where a therapist employed by the Health Service works in a school with another therapist employed by Education. There was further discussion on the problems of differing management accountability which may arise etc. to the use of the term "Paediatric Physiotherapist" as it was pointed out that there is no standard measure of what constitutes a Paediatric Physiotherapist. This document is to be revised by the CSP and will be circulated to committee members in due course.

Elma Bell gave the PRO's report and reminded the committee that her four year term of office as PRO ends in April 1989 and thought must be given as to her successor. Elma reported that the guidelines for the role of Regional Representative are well on the way to completion and would be presented at the next committee meeting for finalisation by the 1989 conference. It was decided that the membership forms would be updated in time for the collection of the 1989 subscriptions. It was agreed that if associate membership of APCP is applied for, one's profession must be specified and voting rights would not apply.

Judy Mead, Professional Affairs Officer at the CSP, attended the committee meeting to explain her role as link person between the CSP and Clinical Interest Groups. The need for each to keep the other informed of policies and activities was recognised as well as the CSP needing to make use of APCP specialist expertise. It was agreed that Judy should attend one committee meeting a year and receive a copy of the minutes of all committee meetings held.

Preparation for the APCP Conferences in 1989 and 1990 were discussed, programme and application form for the conference in Guildford in 1989 was circulated for distribution in the November Newsletter.

The Good Practice sub-committee circulated a draft copy of their guidelines for Good Practice in Paediatric Physiotherapy for all committee members to read and comment upon. It is hoped to have these guidelines ready for publication before April 1989.

The Honorary membership sub-committee reported back with advice on criteria and procedure for the appointment of Honorary Members. It was recommended that Honorary Membership be open to all professionals who have made a significant contribution to paediatrics and a nominee must be proposed and seconded by APCP members before the nomination can be considered by the National Committee. It was agreed that if the nominee had voting rights as a paid-up member, these would continue. Associate members who became Honorary Members would not have voting rights. Forms for the application of Honorary Membership are to be made available shortly.

The Publications Officer, Michele Lee reported that the APCP booklet "The Clumsy Child" is still in demand and stocks are getting low. It was generally felt that this booklet needed to be revised and updated and this will be undertaken in the near future.

It was suggested the committee write a letter of thanks to the Portland Hospital for their hospitality at recent committee meetings and the use of their excellent facilities.

## ABSTRACTS

### A continuing debate

1. Abstract on 'Effects of Physical Therapy'
2. Letter to the Editor - Eva Bower
3. Comments on the Study - Gillian Stern

1. **THE EFFECTS OF PHYSICAL THERAPY ON CEREBRAL PALSY.  
A CONTROLLED TRIAL IN INFANTS WITH SPASTIC DIPLEGIA.**

**Author:** Frederick B. Palmer M.D., Bruce K. Shapiro M.D.,  
Marilee C. Allen M.D., Janet E. Hiller Ph.D., Susan E.  
Harryman M.S., R.P.T., Barbara S. Mosher M.S.W.,  
Curtis L. Meinert Ph.D., and Arnold J. Capute M.D., M.P.H.  
Clinical Research Unit Kennedy Institute for Handicapped  
Children. John Hopkins University School of Medicine.

**Source:** New England Journal of Medicine, March 1988, Vol 318, No. 13,  
pp803-808.

This article begins by stating Cerebral Palsy is a chronic neurological condition due to non-progressive brain injury insult or defect resulting in abnormal motor development. Physical therapy is the most common form of intervention, the purpose being to improve motor development and prevent musculoskeletal deformities. Few studies have been undertaken to determine the effects of physical therapy - those that have taken place have been difficult to interpret for reasons such as small numbers, non random assignments of treatment etc.

The clinical trial evaluated the effect of neuro development physiotherapy as practiced by a therapist certified in that method of treatment as compared with a similarly intensive programme of infant stimulation in 48 children with mild to severe spastic diplegia.

These 48 children were divided into two groups - Group A received 12 months of neuro development treatment designed to improve postural righting, and equilibrium reactions thus assisting the development of gross motor milestones.

Group B received 6 months of infant stimulation based on "Learning Games, a programme consisting of cognitive, sensory, language and motor activities involving much finer motor activity. This was followed by 6 months of N.D.T.

Individual sessions were held at fortnightly intervals - the same therapist giving the treatment.

If infants were not able to move from prone to sitting they received physiotherapy 5 days a week until they were able to achieve this skill as well as the ability to shift their weight in sitting and in prone. Only 4 children needed this input - 3 in group A and 1 in group B in the second six months of the trial.

There was no control group.

Outcomes were measured after 6 and 12 months of the trial; use of the Bayley Scales, parental reports, neurological examinations and SDQ as determined by the Vineland Social Maturity Scale being the main form of Assessment.

The neurological examination was conducted by developmental paediatrician who assessed muscle tone, deep tendon reflexes, pathological reflexes and whether each child would require splinting and/or some form of bracing.

The comparison of each group of 6 months was intended to compare and identify the differences attributable to the effects of physiotherapy and infant stimulation.

At the 12 month assessment, the intention was to identify the effects of earlier commencement and longer duration of physiotherapy.

Motor results were tabled as follows.

	6 Months		12 Months	
	Group A	Group B	Group A	Group B
Independent sitting	83%	91%	92%	91%
Creep	96%	96%	100%	95%
Crawl	56%	65%	88%	77%
Get into sitting	54%	61%	80%	86%
Pull to standing	62%	78%	92%	86%
Cruise	58%	74%	84%	86%
Walk with one hand held	33%	48%	52%	77%
Independent walking 10 steps	12%	35%	36%	73%
Walking backwards	4%	4%	20%	25%

The children in Group A had a lower mean motor quotient than those in Group B and were less likely to walk. They also had a lower mean mental quotient (65.6vs 75.5). This persisted also at the 12 month assessment.

The article concludes that the routine use of physiotherapy in children with spastic diplegia offered no short term advantage over infant stimulation. The scope of the trial was felt to be limited and it is suggested further study of the effects of both physiotherapy and infant stimulation is indicated.

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## 2. LETTER TO THE EDITOR

Dear Madam,

Having seen the reference in your newsletter to the research study reported in the New England Journal of Medicine (1988 318 - 803 - 81 on "The effects of physical therapy in cerebral palsy, a controlled trial in infants with spastic diplegia" by F. B. Palmer et. al. I think that the following points may be noteworthy.

The age of children included in the study was 12 - 19 months. Group A received 12 months of physical therapy. Group B received 6 months of infant stimulation followed by 6 months of physical therapy. Individual therapy sessions were held at the Kennedy Institute every two weeks for one hour.

1. In the two groups there seems to have been a considerable difference in variables, to quote "infants receiving physical therapy, if not yet able to move independently from prone to a sitting position, were enrolled in therapy that took place five days per week when they met objective criteria for stability in sitting and the ability to shift their weight in the sitting and prone positions. This therapy was

provided until the infants could come to a sitting position independently. Only four infants received daily therapy - three in Group A and one (during the second six months) in Group B".

Comparisons after 12 months of treatment showed the scores for lower extremity deep tendon and pathologic reflexes were higher for Group A ( $P = 0.05 + P = 0.01$  respectively by the Mann - Whitney test). In addition, trends showed more lower extremity spastic hypertonus in Group A ( $P = 0.08$ ). No differences were noted between the groups in the number of infants requiring bracing for progressive joint limitation (10 in Group A, 6 in Group B) or surgery (0 in Group A, 2 in Group B).

2. Motor functional skills (quantitative) were measured in the study using the Bayley scales which are not considered a very sensitive determinant of change.
3. Motor performance skills (qualitative) were not measured. If abnormal methods of movement may lead to deformity then surely this is an important consideration. Benesh movement notation, video or gait analysis could have been used for this purpose.
4. The role of the physiotherapist in helping carers in home management was not included in the study, nor was parental attitude or satisfaction.
5. Dr. Martin Bax wrote an editorial in the June 1988 edition of *Developmental Medicine and Child Neurology* in response to this report which was sympathetic to the contribution of physiotherapeutic intervention in the management of cerebral palsy.

Letters to the *New England Journal of Medicine* needed to be received within 6 weeks of publication of the original article. It seems a pity that neither of the two letters published in the September 22nd 1988 edition (Vol. 319 No. 12) were contributed by physical therapists.

Yours faithfully,

Eva Bower M.C.S.P.  
Research Fellow,  
Faculty of Medicine,  
University of Southampton.

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### 3. Comment on the study by Gillian Stern, The Bobath Centre

The study considered 48 children with mild to severe spastic diplegia. However, it did not state what they considered to be a mild or severe degree of handicap, neither was it stated how many of the children in each group were mild or severe. Is this information available?

Whereas the infant stimulation procedures were described in detail, the physical therapy programme was poorly described and considered of 'general righting and equilibrium reactions'.

There was no indication of the use of individual assessment of each child, of the tailoring of treatment to the child's needs; both basic features of the Bobath Approach. In addition, the provision of therapy only once in two weeks, even if combined with home visits to monitor the therapy would be considered insufficient to treat the child effectively, and certainly inadequate to train the parents - an essential feature of Bobath 'therapy'.

To enhance outcome in terms of motor milestones of the group treated initially with the infant stimulation programme, demands careful analysis for this study's results and far reaching implications to be justified.

'Improvement of Motor Development', one of the treatment goals, needs clarification. Does this refer to attainment of milestones only, however abnormally performed, or to the quality of their attainment?

Many abilities in standing and walking were not evaluated:

- the child's ability to stand up from the floor unaided, to stand still unsupported or to balance in standing and use his hands for play.

An interesting inclusion in the statistical analysis was the ability to walk backwards. This ability demands a better standing balance and the use of more active extension of hips and knees than forwards walking.

Since conclusions have already been drawn from the statistically small sample, it may be valid to make the following comments:

After 6 months, the group given physical therapy, (Group A); had 12% of walking children of whom 33% could walk backwards. The group given infant stimulation (group B) had 35% walking independently, however only 11% of these could walk backwards. Input was changed after 6 months, in that Group B were also given physical therapy.

After one year, 55% of the walkers in Group A were able to walk backwards. In Group B, 61.6% of the walkers could do the same (six months earlier the percentage able to do this was 11%). Thus the inference is that N.D.T. input, whilst slowing down the **attainment** of walking, **prepared** the child for a better walking pattern.

Another outcome of the trial showed no significant difference between the two groups with regard to the incidence of contractures, or the need for bracing and surgery. This is unsurprising considering the young age of these children. Significance may be attached if the study is followed up in five years and in ten years.

We know from experience and clinical data that a large proportion of diplegics will attain all the motor milestones, including independent walking, albeit late than average. The assumption that the child who walks earliest is the one who is progressing best, is erroneous. This same child, encouraged to walking an uncontrolled abnormal gait pattern may well be the first to suffer from contractures and deformities, needing early and repeated surgery.

This defeats the second stated goal of the therapy - that of prevention of

complications.

Thus the goal of the Bobath approach is not merely to attain motor milestones, but to enhance the **way** in which the child moves. This will enable the child to use more normal motor patterns to achieve its milestones. The use of more normal motor patterns leads directly to fewer neuromuscular complications, and thus allows for **long term** function.

## SUMMARY

The trial sets out to study the validity of physical therapy for the child with spastic diplegia. However, the physical therapy input is poorly defined. In addition, the authors seem to base their therapy on the Bobath approach as their references indicate. This raises the issue of whether the methodology of N.D.T. can be equated with the Bobath Concept as taught to clinicians and applied to patients in this country.

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## LETTERS TO THE EDITOR

Via Cremegnonne 7c  
6924 Sorengo (Ti)  
Switzerland

Dear Editor,

I am a mother of 3 year-old twins with cerebral palsy and am looking for a therapist who would like to come over to Switzerland for a year to follow my twins progress and help devise an exercise programme to suit their progressive needs.

We are looking for a girl for a year from September onwards, preferably with some Bobath training. We will treat her as part of the family, give her a room and board, no house work, Italian lessons with health insurance paid by us. We speak Italian and English at home. We will pay pocket money at about 300-350 Swiss Francs per month.

Anyone interested should contact me at the above address.

Mrs. J. Vivaldo

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Dear Editor,

I have developed an exercise machine for mentally and physically handicapped children. It was first developed for my daughter who is now 5 and has been both mentally and physically handicapped since the age of 3 months.

She caught a virus called Reyes Syndrome which attacked the liver and brain. After seeing her motionless every day, I decided to invent something to help this type of problem so I devised an exercise type machine that you can strap to the child

securely and be able to leave her exercising whilst the parent or mother gets on with other things, knowing that the child is quite safe.

We have been using this for approximately 3 years now, and our daughter has done approximately 29 miles.

We found a remarkable difference in her mental attitude. Her leg muscles have improved, and offers many stimulant properties.

Called a 'STIMULATOR', the machine costs £1,170 for a 2 hour or £1,150 for a 1 hour model. I produce these myself and know a lot of children that will benefit from their use.

For a demonstration or further information, please do not hesitate to contact me.

Mr. L. D. P. Duffield, 5 Bankside, West Grimstead, Salisbury, Wiltshire SP5 3SQ.

### THE STIMULATOR



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### STUDY DAYS/COURSES

#### Clumsy Children

Sat. 22nd April at the Post Graduate Centre, William Harvey Hospital, Ashford, Kent. Speakers include two physiotherapists from the Royal Alexandra Hospital, Brighton. Wendy Clark, Occupational Therapist from Canterbury, an Orthoptist to discuss Visual Dyslexia and a Research Lecturer on Motor Impairment from Christ Church College, Canterbury. Applicants should send fee (£12 members and £15 non-members - cheques payable to APCP) together with a large stamped addressed envelope to the S. E. Secretary, Mrs. Joyce Seccombe, Child Development Centre, Ashford Hospital, Ashford, Kent TN23 1LX.



### **Children with Perceptuo Motor Problems**

4th March. For details see Nov. '88 issue.

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### **The Hand as a guide to Learning**

21st March, Handwriting Interest Group, Institute of Education, University of London, 20 Bedford Way, WC1H 0AL.

Speaker - Ester Cotton. Further information from Dept. Ed. Psychology and Special Educational Needs.

### **Arthrogyposis**

21st March 7.30 p.m. Welsh Region. Dr. Helen Hughes, Consultant in Genetics at U.H.W., Cardiff, to be held at Llandudno General Hospital.

### **Paediatric Neurological Conditions**

28th February, 7.00 p.m. Welsh Region. Dr. Sheila Wallace, Consultant Paediatric Neurologist at U.H.W. Cardiff, to be held at Eveswell Clinic, Newport.

For more details of the above two lectures, contact the Welsh Regional Rep., Lyn Horrocks on 0222 755944, Extn 3585.

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### **British Association of Bobath Trained Therapists**

25th February in the Lecture Theatre, Royal Free Hospital, London NW3, Conference and Annual General Meeting, open to BABTT members only.

For more details, contact BABTT Secretary, Staphanie Kenp, 43 Anson Rd., London N7 0AR. Tel: 01 - 435 - 3895.

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### **Clumsy Children**

22nd April, arranged by S. E. Region and to be held in the Post Graduate Centre, Ashford Hospital. Speakers include two physiotherapists from the Royal Alexandra, Brighton; Wendy Clarke, O.T. from Canterbury; an Orthoptist talking on visual dyslexia; and a Research Lecturer in Motor Impairment from Christ Church College, Canterbury.

Send fee (£12 Members, £15 non-Members, cheques made payable to APCP) when applying to S. E. Regional Secretary, Mrs. J. Seccombe, Child Development Centre, Ashford Hospital, Ashford, Kent, together with a large S.A.E.

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## SNIPPETS

### NEW SUPPORT GROUP

A new support group has been set up for parents of children with Sacral Agenesis. Twelve families have already been contacted, having had a meeting last November with support from Mr. Smith, Consultant Orthopaedic Surgeon, St. Thomas' Hospital and Dr. Lowy, specialist in diabetes.

For more information, contact Mrs. Helen Gillard, 11 Kelly Road, Mill Hill, London NW7.

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### APCP SWEATSHIRTS

London Branch Committee are producing sweatshirts for the APCP National Conference in March 1989.

These white sweatshirts have not only an APCP National Conference 1989 Logo printed on them, but also 'FRONT', 'BACK', 'LEFT' and 'RIGHT' in the relevant sections in different bright colours. Especially useful for those of us who have perceptual problems!

If you are attending the conference, then you will receive information about them in the post. Otherwise, why not write to Marion Main, enclosing a S.A.E., asking for details. Marion's address is 76 Hill Road, Pinner, Middx. HA5 1LE.

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### PIEDRO BOOTS - AVAILABILITY PROBLEMS?

Penny Robinson, Director of Professional Affairs at CSP would like to hear if therapists are having any problems regarding the supply of Pedro Boots to their patients. This is not directed at the actual production of boots from the U.K. distributors, which we understand is not a problem, but CSP would like to know if it is becoming difficult to obtain Pedros by prescription.  
Phone Penny at CSP - 01 242 1941.

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### KAYE POSTURE CONTROL WALKERS

An answer to the query in our last edition - Yes, these walkers are now available in this country.

The U.K. Distributors are Quest 88 Ltd., 2 Turnberry Close, Perton, Wolverhampton WV6 7PE.

The Kaye Posture Control Walker is specifically designed to eliminate many of the problems of gait. These walkers space the handgrips on either side of the child instead of in the front, and the back of the walker is enclosed with the front open.

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## REGIONAL PROFILE

### NORTH WEST REGION OF APCP

The N. W. Region is one of the largest in terms of Membership. Geographically it stretches from the Cheshire/Shropshire border in the south to the Scottish border in the north, the Irish Sea to the west and the Pennines to the east.

The region encompasses Mersey and North West Regional Health Authorities and the western half of the Northern Regional Health Authority, and these comprise a total of 31 separate districts.

Within the region there are several large specialist centres including the Royal Liverpool Children's Hospital at Penlebury, Salford and Booth Hall Hospitals in North Manchester. There are also many Child Development Units and Special Schools throughout the region.

The Annual Membership of approximately 120 is well distributed around the region and we try to ensure that this is reflected in the committee. The N. W. Region is an active and enthusiastic group. The local committee organises 3 - 4 study days annually on subjects requested by the members; these days are very successful and are a good opportunity for an exchange of ideas and information.

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### REGIONAL REPORTS

- Trent**                    **Reg. Rep. Margaret Meagher, 9 Oak Road, Thurlston, nr. Borrowash, Derbyshire DE7 3EW.**
- The Study Day on Scoliosis at Lincoln was well attended and much enjoyed with Mr. Webbe demonstrating his skills at operating 2 slide projectors at once! Derby's Visual Impairment day was postponed because of lack of support, possibly because of the postal strike and will be held in May or June '89. Nottingham are to hold their day on Juvenile Arthritis in the spring. An advance course on Sensory Integration will be held in Chesterfield on September 6,7,8th - details from Jenny French later. Details of the A.G.M. in March will be sent out to each member.
- Wales**                    **Reg. Rep. Lyn Horrocks, Children's Unit, University Hospital of Wales, Cardiff.**

An excellent lecture by Dr. Mark Drayton, Consultant Neonatologist at the Department of Child Health, University Hospital of Wales, Cardiff, was held on 6th December 1988. The topic was 'Neuropathology of the pre-term baby', graphically illustrated with

slides and overheads, outlining the causes and effects of neuro-pathology associated with prematurity. The lecture was well attended by physiotherapists, occupational therapists and speech therapists working with multiply handicapped children in the community and special schools in South Wales.

For lectures planned for early 1989, see 'Study Days'.

#### London

**Reg. Rep. Vivienne Read, Flat 2, 62 Madeley Rd., Ealing, London W5 2LU.**

On Wednesday 16th November Dr. Margaret Lynch, Paediatrician from Guy's Hospital gave us a very interesting and informative talk on 'Child Abuse'. Unfortunately attendance was disappointingly poor.

Dr. D. Meerstadt, Community Paediatrician in Riverside AHA will be presenting a lecture on 'Children with AIDS and its implication for Physiotherapists' on Thursday, 9th February at the Hospital for Sick Children, Great Ormond Street, London WC1. This will be following the A.G.M. The programme is as follows:

6.30 p.m.	A.G.M.	Hospital Lecture Theatre
7.00 p.m.	Lecture	Hospital Lecture Theatre
8.00 p.m.	Cheese and Wine Buffet	Seminar Room

If you wish to have further information please contact: Marion Main, evening tel. no. (01) 866 7001.

As you know, this year it is London's turn to host the National Conference, so we are looking forward to seeing lots of local members there.

#### S. West

**Reg. Rep. Gillian Riley, Children's Unit, Odstock Hospital, Salisbury, Wilts. SP2 8BT.**

Arrangements for the study day entitled 'Clumsy Children' are completed and being circulated amongst the S. W. Membership with this Newsletter. This is being held at Musgrove Park Hospital, Taunton, on March 4th 1989 and it promises to be a particularly interesting day with speakers representing both therapies and education. Michelle Lee, who is continuing the work of Dr. Judith Lazlo in this country is one of the speakers.

Space is limited so early booking is advocated.

The A. G. M. of the S. W. Region will be held during the day.

Plans for a Study Day on Juvenile Arthritis are in progress.

#### N. West

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

By the time this newsletter has been published we will have already held our study day on 'Clumsy Children' and will be looking forward to the A.G.M. on Sat. 4th March 1989, at Alder Hey Hospital. This will include a study morning about 'Epilepsy in Childhood' and we hope as many members as possible will attend.

S. East

**Reg. Rep. Terri Fearn, 38 Woodlands Close, Peacehaven nr. Newhaven, E. Sussex.**

'Clumsy Children' seem to be in vogue, and so this region are looking forward to a stimulating study day with an assortment of varied speakers on Sat. 22nd April, to be held at the Post-Graduate Centre of William Harvey Hospital, Ashford, Kent. For more details, see 'Study Days'.

Our A.G.M. will also be held on that day, and nominees for committee are invited, together with seconders, to be sent to the regional rep. before the meeting.

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### HERE AND THERE

The Cystic Fibrosis Research Trust celebrates its Silver Jubilee this year and will be having a busy National Week from 15 - 23rd April.

There are still approximately five CF babies born each week in the U.K.

The colourful world of **Wizzywear** makes clothes for children with disabilities, designed with love, made with style and worn with ease. Send for their catalogue from Wizzywear Ltd., FREEPOST Gillingham, Kent ME7 4BR.

The latest fibre optic techniques are being introduced to assist in the determination of the position of radial arteries, aid the detection of thoracic disorders and facilitate the examination of intercranial haemorrhaging. Safe and affective, the system will assist paediatricians with many of the problems that occur in neonatal care, particularly in infant intensive care.

Papworth Hospital physiotherapists have discovered that good therapy comes from hugging a teddy bear as a post-operative measure to assist coughing following cardiac surgery. There is nothing wrong with this technique pre-operatively!

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Material for the May 1989 Edition of this Newsletter should be in the hands of the Editor no later than **April 1st 1989**.

