# ASSOCIATION OF

# PAEDIATRIC

# CHARTERED PHYSIOTHERAPISTS


# NEWSLETTER

Association of Paediatric Chartered Physiotherapists

Newsletter No. 52 August 1989

# BACK TO THE BARE BONES

CONTENTS



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The final date for submission of articles for the November newsletter is
**1st October 1989**

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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.

# EDITORIAL

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

This edition of the Newsletter reminds us of the 16th Annual Conference of the APCP held at Guildford. The London Region were hosts to the conference entitled 'Back to the Bare Bones', and all their preparation and hard work resulted in another highly successful few days.

The high standard of speakers reflects the professionalism of paediatric physiotherapists and it is always useful to update our knowledge in a congenial setting among like minded friends.

The Newsletter contains many precis of the lectures, and you will find some in note form, kindly compiled by members of the London Branch. Others have been presented by the speakers themselves. Members not able to attend can read and reflect on what opportunities they missed and those who were present at Guildford can refresh their memories.

An opportunity for next year which should not be missed is a trip to U.S.S.R., to visit various paediatric clinics. It is planned from March 17 – 24th 1990 and will cost £499. Delegates to Guildford who expressed interest in the trip will receive more detailed notification. Any other interested members should contact the Chairman of APCP.

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# ANNUAL CONFERENCE

*Back to the Bare Bones*

**University of Surrey**
**Guildford**

# NEW ADVANCES IN ORTHOTICS

## RADIOLOGICAL DIAGNOSES

**Dr. D. Shaw, Consultant Radiologist, Great Ormond Street Hospital**

### Development of Radiology – last 100 years;

| | |
|---|---|
| 1900–1910 | Active scientifically and commercially – Theatres produced X–Ray for 3p. |
| 1910–1920 | Time of first Great War – all development stopped. |
| 1920 | Glass plates were developed into x–ray films. Prevention was highly important. |
| 1930 | Great Ormond Street had x–ray machines but a cavalier attitude to protection for staff and patients. |
| 1940–1950 | Second Great War – Realised that radiation could damage health. |
| 1950 | X–Rays were used for Cine Films. Also important for cardiology. |
| 1960–1970 | Closed circuit televisions. Dark Rooms became mechanised. |
| 1970–1980 | Things began to develop quickly;<br>Gamma Camera<br>Computed Tamography – British Invention<br>Ultrasound<br>*The microchip revolutionised this specialist field.* |
| 1980 | Digital Isotope Tamography<br>Nuclear Magnetic Resonance |

### Radiology in relationship to Orthopaedics

The use of ultrasound in the last 10 years has proved a valuable source of information.

1. **Screening** – Important in diagnosis of C.D.H. in neonates. It is able to diagnose dysplasia of acetabular margin very early in life.
   The examination can be both static and dynamic and can quantitate how mobile the hip is.
   Hopefully all babies will have hip ultra–sound checks in the near future.
2. **Isotope Scanning** – This technique has been used for many years and is very useful in orthopaedic practice. it is useful in identifying infections and tumours. Computer tamography can be used with isotope scanning for diagnosis. It increases specoficity of bone scan and is useful in othopaedic practice.
3. **C.T. Scanning** – This has been in for the last 10–14 years and is easily available.
   Its use in neuroradiology is well known but it was some time before its use in orthopaedics became apparent.

### Use in Diagnosis

1. Delineation of tumours and infections. It shows areas which cannot be seen by plain film.
2. Soft tissue calcification and injuries eg sports injuries in children.
3. Trauma – shows fractures but also soft tissue trauma damage which is helpful for management of patient.
4. Paediatric bone malignancy – important to know extent of tumours into soft tissue.

### Nuclear Magnetic Resonance – N.M.R.

One of the most recent developments in the field of radiology and it produces excellent pictures. It works by looking at Hydrogen atoms as they are most susceptible in this technique.

There are no moving parts but you can orientate the slices which you reconstruct through the computer in varying degrees. Multiple slices can be exposed at one time.

Bones do not show up as calcium gives no signal but produces a negative shadow. Although the method is rather claustrophobic and frightening for a child, the advantages are that there are no involvement of x–rays.

The magnetic field may have some worries but there is no evidence so far of high magnetic field damage. it is still safer than radiation.

Babies have to be sedated or anaethetised as it takes a long time.

### 3D C.T.

Construction of 3 dimensional pictures are done by reconstruction from multiple ordinary computer tamography sections. The information is fed into a computer and soft tissues can be removed piece by piece to expose other information needed.

You can quantitate the degree of bone abnormality.

### MR1 3D

Same process as above. All tissues are stripped to leave neurological tissue only.

Dangers of Radiation in Children

Protection is vital but in the last 20 years all sophisticated technology has developed but gonodal dose of radiation has not fallen. Children are still exposed to same degree of x–ray radiation. We hope it does not damage, but there are long term affects.

Gonodal shielding can reduce doses of radiation: in boys – 75–95%
in girls - 54–70%

### Rare Earth Screen Cassettes

These can reduce dose but only half British hospitals have these in the X–Ray Department. This can have 50–90% dose reduction. Can reduce down to 10% in children.

### Carbon Fibre X–Ray Table Top

If these are used the dose can be reduced significantly. Only 6 table tops are used in this country as they are costly.

### Film Processing

Careless processing can result due to slowing down of film processing and therefore leading to increased compensatory exposure.

### Digital Radiography

There will be a great development in this area in the next 10 years. The basis of digital radiography is that information from black and white x–ray films can be changed to digital images. These are then entered into a computer from millions of readings. The dose is reduced by 2%.

As yet details shown are not as clear as high quality x–ray films but it will improve. The images appearing on the computer can be measured and manipulated.

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## EFFECTS OF ACTIVITY ON MUSCLE

**Prof. Vrbova – Prof. of Developmental Neuroscience, University College, London**

Muscle is a structure moving joints and enabling us to move. It consists of discreet motor units which are made up of a motor neurone, its afferent axon and the muscle fibres it supplies (as described by Sherrington). A stained cross–section of skeletal muscle shows muscle fibres which take the stain to differing degrees suggesting and confirming an heterogeneous make–up.

That is, skeletal muscle itself contains different types of fibres. This raises the question as to whether each motor unit has the same fibres or has arbitrarily grouped fibres. Experiments show, through stimulation of a single motor unit, that muscle fibres in each motor unit are all of the same type, and that skeletal muscles are composed of different types of motor units.

Motor units are essentially of three different types according to the properties of their muscle fibres:

1. Rapid contraction/relaxation,
   Requiring massive effort,
   Producing massive force,
   Rapidly fatiguable.
2. Longer contraction/relaxation,
   Requiring minimal effort,
   Slowly fatiguable.
3. Very slow contraction/relaxation,
   Active all the time,
   Very fatigue resistant.

In everyday movements, motor units are recruited in the order from type 3 to type 2 to type 1.

The question is how the perfect matching between the requirement of firing of a motor unit and the properties of muscle fibres comes about? Now in some muscles particular motor units are segregated, therefore this question was able to be answered. For example, soleus is a muscle containing only slow motor units (type 3) and tibialis anterior is a muscle containing only fast motor units (type 1). By experiment, where these two muscles were cross innervated, after only a few months the fibres came to resemble in characteristics those of the nerve of the motor unit supplying it (ie. soleus came to have the properties of tibialis anterior, a fast muscle and vice versa). The conclusion therefore was that the nerve supply determines the muscle fibre's characteristics in a motor unit, and that the muscle fibres therefore are not a pre–determined structure.

How the change in muscle fibres characteristics occur in this situation was questioned. Many suggestions were put forward which included

(i) specific chemical influence on the muscle from the innervating nerve, and
(ii) imposition of a particular activity pattern on the muscle by its nerve.

Experiment has shown it to be suggestion (ii), that is, the type of activity imposed on the muscle is the determining factor. Experiments in rabbits, where the tibialis anterior was stimulated continuously, in only two weeks the muscle fibres' characteristics had changed from fast to slow. That is, they were fatigue resistant and on cross–section had a large store of mitochondrial enzymes. Thus it became a muscle which could endure and do more 'work'. Other characteristics also were noted to change over a three week period of stimulation, including;

- increase in capillary density (in one week),
- increase in enzymic levels (in weeks one and two),
- increase in anaerobic metabolism (in weeks two and three).

The overall conclusion therefore was that activity modifies gene expression. And so, by applying different types of activity to certain muscles, one can modify their gene expression and therefore their function.

Following experiments on humans this was shown to be so. After six weeks of stimulation of tibialis anterior, EMG and biopsy proved it to have become of type 3, that is slow acting and fatigue resistant with high mitochondrial enzyme density. Thus it had become a muscle where one could make voluntary use of fatigue resistant fibres, and therefore a more 'efficient' muscle.

It thus indicated the potential of changing our muscles' properties to meet our needs.

Muscle development in utero goes through the following stages: non–specific mesenchymal cells divide several times and then become myoblasts within the first month of foetal development; myoblasts then go on to form all the components of a muscle fibres, by fusing together become myotubes which then line–up to form myofilaments – the contractile units of muscle fibres. The type of muscle fibre being determined by its nerve supply and the activity placed upon them. At birth, most muscle fibres are not fully differentiated, with a few myotubes present, but they are already innervated. Their further differentiation depends on their type of innervation but also the activity placed upon them. This has been confirmed by experiment and observation on babies.

If muscle activity is prevented, for example by dennervation or immobilisation, the muscle will stop in its development. This can be 'devastating' in an infant with poor recovery, but mature muscles of an adult will recover well. This has been confirmed by experiments on rats. In conclusion therefore, it is very important to maintain normal activity of young muscles in all possible situations.

The activity placed upon a developing muscle must be appropriate to its metabolic state at that critical stage or development. In Duchenne Muscular Dystrophy it is believed that the muscles mature more slowly than the nervous system and so the activity placed upon the muscles is inappropriate. A trial is currently running on four year olds at the Hammersmith Hospital, on the activity level of the tibialis anterior. Its level of activity is being increased by periods of continuous electrical stimulation (10 Hertz) and so far it has shown to reduce the rate of regression and to gain some clinical improvement.

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## RESEARCH INTO HIP DISLOCATION IN CEREBRAL PALSY

**David Scrutton, Superintendent Physiotherapist,. Newcomen Centre, Guy's Hospital.**

Mr. Scrotton started with a very informative literature review of the late 19th and early 20th Century; starting with Sayre (1880) and Lorenz (1897) and on to Watson–Jones who, in 1926, stated that hip dislocation in cerebral palsy was "very rare". He felt that there was a muscle imbalance – a contracture of the adductors and to a lesser extent the hip flexors. He recommended an obturator neurectomy and flexor release, but not of psoas. He then advocated the 6 months post–operative splintage in abduction. Even so, in 1953 Matthews stated that hip dislocation in cerebral palsy had never been described in the literature! He recommended anterior obturator neurectomy and adductor tenotomy. Thereafter there was a flood of literature. It is now agreed that;

1. The hips are normal at birth.
2. The cause of the most common dislocation is adductor "overactivity": probably the postural imbalance rather than strictly a power imbalance or tone imbalance. (It is difficult to understand both from the literature and within oneself what the words "power", "tone" and "pattern" mean and what is their relationship to one another). Mr. Scrutton considers the adductors lack growth rather than contract, as Sharrard described 20 years ago.
3. There is still much discussion as to the role of psoas in dislocation of the hip. Bleck states that it is often the major factor whereas a variety of authors disagree. Mr. Scrutton has not identified it as playing a major a role in many of the children he has seen, though possibly

these are a different group from those described by Bleck.

A slide presentation followed illustrating the 3 typical types of dislocation:

1. Bilateral anterior dislocation where it was suggested that the mechanism of dislocation in the (commonly) supine child was the neck of the femur butting against the lip of the acetabulum forming a fulcrum and the long lever of the femoral shaft lifting the head out of the acetabulum. It is very disabling but uncommon.
2. Bilateral postero–lateral dislocation, common, from adduction internal rotation (and ?semi–flexion).
3. Windswept hips, where the adducted and internally rotated hip is at risk of dislocating postero–laterally and the abducted laterally rotated hip being rarely at risk except following bilateral adductor tenotomy. Windsweeping starts in infancy and it is usually related to total body asymmetry. The range of abduction of the at risk hip is restricted very early in life.

Mr. Scrutton would recommend examining these children's hips in prone with the hips in extension and the knees flexed to relax the medial hamstrings, which otherwise can act as a hip adductor.

A sequence of four slides followed, illustrating x–rays taken at 4, 6 and 9 years of age and in adult life.

Slide 1 showed the adducted hip slightly standing off but with fairly equal acetabulae.

Slide 2 at 6 years: the acetabulum on the adducted side is not as well defined as the abducted hip and the head of the femur is standing off more than it was previously.

Slide 3, at 9 years shows the head of the femur having migrated upwards and the acetabulum has lost its socket shape. The opposite hip is stable. Slide 4 (adult): the dislocated femoral head is eroded and it's acetabulum vanished. The "abducted" hip is abnormal but very stable.

Mr. Scrutton then stressed that we should be thinking about the type of therapy that occurs with children at preschool age. Propping and righting reactions are all very well, but for many the priority must be to keep the spine straight the hips located.

Further slides and discussions followed regarding surgery and subsequent follow–up. It was stressed that long term follow–up post surgery was vital. In some cases seen it is difficult to know whether the subsequent problems were due to inappropriate surgery or to poor management and positioning following surgery. Mr. Scrutton together with Dr. Baird reviewed the children seen in the orthopaedic clinic at Guy's. 852 children were seen and they selected those with cerebral palsy affecting all four limbs and whose hips were not dislocated at referral. 184 children fell into this category.

| Referral Age | <18/12 | 18/12 – 3 yrs | >3 yrs |
|---|---|---|---|
| Diplegics | 14 | 40 | 68 |
| Quadriplegics | 11 | 26 | 23 |
| Athetoids | – | 2 | – |

50% arrived after the age of 3 years.

2/3 were diplegics, 1/3 quadriplegics.

The age of "pulling self to standing" seemed to be a significant factor as to whether the hips later dislocated.

From the 368 hips at risk, 4% dislocated – all being from the group that never pulled to stand.

If the hips which were more then 1/2 out were included (on the assumption that they were likely to dislocate eventually), the final number which dislocated would have been 8%.

However, it is unlikely that these would have been allowed to dislocated as various preventative steps would have been taken. In most other published results it is suggested that between 20 and 28% of hips, of those who never bear weight, dislocate.

### MEASURING FOR HIP SUBLUXATION

Various methods were discussed, some of which varied too greatly with lordosis, kyphosis and hip flexion deformities which are common in cerebral palsy. The method of choice was the Migration Percentage (MP) which describes the relationship of the head of the femur to the acetabulum as a percentage of the femoral head width. Accurate positioning of the child for xray is important.

One study looking at the MP against the age in 355 normal children showed that while most had no MP at all those that did migrate did so usually at less than one per cent per annum and the maximum encountered was 10% at four years. Vidal et al (1984, 1985) studying children with spastic hips suggested the use of MP for walking prognosis. In their study children with a hip MP of up to 4 per cent per annum were ambulant in the community, whilst those with an MP over 7% per annum were non–ambulant. However, Mr. Scrutton was not certain that this had a prognostic value as he had examples of his own patients where the MP was more than 7% per annum prior to walking but improved radically once the child walked.

From the literature and experience, it was stressed that it was very important to obtain good hip containment and weight bearing early in life, certainly before 4 years and ideally before 30 months. After 4 years of life it is increasingly difficult to obtain acetabular remodelling. After 5 years Kalen and Bleck found poor soft tissue only results. Conversely however, once a stable hip joint has developed its stability appears assured. Thus there is a considerable difference in the stability of hips in the normal child who sustains a head injury after being ambulant.

Further reading: Scrutton, D. (1989) "The early management of hips in cerebral palsy" Developmental Medicine and Child Neurology, 31, 108 – 16.

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## NEW ADVANCES IN ORTHOTICS

**Dr. G. Cochrane, Mr. A. Chase, M. Whittle and J. Taylor, Mary Marlborough Lodge**

All four speakers came down from Oxford.

The team consisted of a physiotherapist, an orthotist, a bio engineer who is also a clinical physiologist and a medical practitioner.

The lecture focused on the Ambulatory orthosis for paraplegic children.

Mike Whittle spoke first on the mechanical properties of the ambulatory orthosis and the particular difficulties paraplegics have in learning to walk.

The main reasons why paraplegics can't stand are because they cannot control their hips, knees and ankles and because they don't know where their centre of gravity is. An orthosis can control knees, hips and ankles and a walking aid, e.g. frame or crutches, will provide a large base for the centre of gravity to fall within.

He said normal walking consists of active hip flexion with one leg, then weight transference and active hip flexion on the other side. Paras can use their arms to pull the centre of gravity forwards by leaning sideways so that one leg can clear the ground, using gravity to swing the leg forwards then bring the leg to the ground in front of the other foot.

### Different Types of Paraplegic Ambulation

1. Wheelchair – most favoured, useful, fast method of getting around. The ambu-

latory orthosis must have advantages over the wheelchair if it's to be accepted by the patient.

2. Swivel Walker - slow but familiarises the child with standing.
3. Swing through gait - hip knee ankle foot orthosis.
   clumsy and requires a lot of energy.
4. Reciprocal gait - hip guidance orthosis.
   reciprocal gait orthosis.
5. Functional Electrical Stimulation – F.E.S. may be used in twenty years time.
6. Hybrid – F.E.S./Orthotic stimulation:
   Research going on. More practical than F.E.S. alone.

**The Practical Devices:**

1. Hip Guidance Orthosies. HGO: Also called a parawalker.
   This was developed at Oswestry. The hip mechanisms prevent adduction.
2. Reciprocating Gait Orthosis: RGO. This was developed in Louisianna by an orthotist called Roy Douglas.
   It is lighter than the HGO and has an AFO section which fits inside a shoe.

**Common features of the Practical Devices**

1. A rigid brace locks at the knees and ankles.
2. Both prevent adduction of the hip.
3. Simple donning and doffing without help.

**Differences between HGO and RGO**

HGO:
Hip joint is linked by cables.
AFO inserts inside the shoe.
Designed to be used with a rollator.
In a trial on walkers various measurements were noted.
Normal cadence 110–120/min
The cadence of patients wearing ambulatory orthosis is reduced to 40/min
Stride length is reduced.
Velocity is 0.25m/sec which is the fifth of normal velocity.
A wheelchair can move faster than a normal walking person.
The HGO walking produces a smooth forward walking pattern with rotation at the hips when crutches are used.
The RGO is a more jerky pattern as it is necessary to stop to move the rollatory forwards.

**The Advantages of a Wheelchair**

1. When stationary, hands are free.
2. Faster
3. Low energy consumption
4. Easier to use.

**Advantages of Walking Orthoses**

Prevent contractures
Prevent osteoporosis
Bladder and bowel drainage improved

Improved ventilation
Better psycologically
Pressure sores can be prevented.
Dr. Cochrane continued the lecture. In the list of things to be gained from the use of walkers one must not underestimate the importance of the knowledge of achievement.
Walking can be started over the age of three, and an IQ of above seventy is a good guideline.

**The Shortfalls**

1. Hard work for children, parents and therapists.
2. Difficulty toileting.
3. Direct costs, supplying, fitting, training.
4. Risk of pressure sores, particularly in the ankle and foot.

**Decisive Physical Characteristics to consider**

1. Nature of the disease.
2. Associated diagnosis.
3. The level of the lesion
4. The prognosis
5. The strength in the trunk and upper limb
6. Spinal deformity.

**Contra indications**

1. For the HGO:
   Contractures at the hips and knees
   The likelihood that the brace wouldn't be used for more than 6 months.
2. For the RGO:
   Not readily used by people with weak upper limbs.

**Prices approximately**

| | |
|---|---|
| HGO £1,200 | Service costs at 6/12 = £30–£100 |
| RGO £1,500 | Service costs at 6/12 = £130–£200 |
| Hybrid £1,100 | Service costs at 6/12 - £130 |

Jean Taylor went on to describe the physiotherapy.

Before a child comes for a fitting the local physiotherapist fills out a pre–assessment form which contains relevent points.

**Pre Assessment includes**

1. The school type
2. The home location, size and stairs, family co–operation.
3. Current functional ability.
4. Mobility, chair, walking aid etc.
5. Self care
6. Transfers
7. Stamina
8. Balance and coordination
9. Motivation
10. How much and what type of physiotherapy.

**At the fitting a regiment of pre training exercises is given**

1. Strengthening the upper limbs with weights etc.

2. Stretches hips, knees and ankles.
3. Standing in a standing frame, with calipers, in a swivel walker or on a tilt table.

**Training for both HGO and RGO**

Pushing on physios hands; progress to parallel bars.
Balancing in bars. Start by kicking a ball.
Progress to rollator or crutches.
Teach doffing and donning.
Skin checks after each session.
Walking indoors and outdoors.
Get onto and off the floor.

**HGO Gait**

Lean to the stance leg side so that the other leg is clear of the ground. Push on the left arm for the left arm for the left leg to swing through. Four point gait with elbow crutches. Stand up with knees locked then lock the hips; unlock the hips to sit down.

**RGO Gait**

1. Diagonal weight shift.
2. Hip and trunk extension. (Tuck)
3. Push down on hand
4. Swing through (kick)

**Functional Goals may take months**

1. Independent donning and doffing.
2. Sitting – standing.
3. Activities in standing.
4. Toileting.

**Training**

1. May take 3 days – 3 weeks
2. Local physiotherapists visits.

**Report to Local Physiotherapist on:**

1. Distance walked.
2. Aids.
3. Doffing/donning.
4. Sitting/standing.
5. Slopes.

A pre review form is sent to the Physiotherapist after four months before the first review.

1. Estimate use.
2. Location of use
3. Any recent illness
4. Fitting of orthosis.
5. Problems in: Donning/Doffing, Sit/Stand, Walking, Step/Stairs.
6. School/home management.

One of the main problems is toileting for continent users.
Usage varies with school, work and family commitments.

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# SCOLIOSIS

**Mr. Peter Webb, Ms Di Coggings, Queen Elizabeth Hospital, Hackney**

This enlightening and interesting talk was started by Peter Webb who explained the clinical aspects of scoliosis. Di Coggings then continued with the physiotherapy input and management.

## DEFINITION

'Scoliosis' is a sideways bend in the spine, usually associated with a twist. If it can be corrected then it is postural not structural. The term scoliosis is a description of a deformity, not a diagnosis.

## TYPES OF SCOLIOSIS

Idiopathic - unknown cause 80%

Infantile – affects boys more than girls, must be diagnosed and treated early to prevent gross deformity during rapid growth spurt.

Juvenile – probably late onset infantile, or early onset adolescent.

Adolescent – 80% are progressive, affects girls more than boys. Progression does not always stop after maturity. Curves of more than 40 degrees often progress and more than 60 degrees are rarely stable.

Ostenogenic 5%

Caused by failure of formation or segmentation or a mixture of both.

### Neurogenic

Seen in cerebral palsy, spina bifida, muscular dystrophy, spinal tumour, Retts syndrome and other syndromes, also in the 'floppy child'. All children with neurogenic scoliosis need careful assessment to determine whether the advantages of surgery will outweigh the disadvantages.

## ASSESSMENT FOR SURGERY

Quality of life – problems, deformity, abilities – physiotherapist.

Surgical needs – surgeon.

Fitness for surgery – anaesthetist.

Parental agreement.

## SURGERY

Spinal fusion – bilogical (bone)
mechanical (metal)

Surgery can be an anterior fusion or a posterior fusion or anterior followed by posterior.

Mr. Webb concluded by saying that fusion of the spine will give stability but will also lead to stiffness. If this stiffness will be a greater problem than the scoliosis then surgery is not indicated.

## PHYSIOTHERAPY IN SCOLIOSIS

The physiotherapist can offer regular assessment and can teach exercises to maintain flexibility, although exercise will not correct a structural scoliosis.

## ASSESSMENT

You must always look at a child in its most natural position and must always undress the child to avoid missing things – for example children with double curves have equal shoulder levels and would be missed.

It is also important to ask them to bend forwards or bend them if they can't do it themselves, as forward flexion accentuates the rotation, and rib humps if present will be seen.

On assessment you are looking for asymmetry.

### ASSESSMENT PRIOR TO SPINAL FUSION

Need to know – range of movement
abilities and disabilities
compliance with treatment

### EXERCISES

Exercise is very important to maintain flexibility, so if the child can't do exercises then the parents must be taught to do them for him. Children with neurological conditions have a high risk of developing a curve, and therefore preventative measures must be taken either by active exercises or by stretches.

If a child is floppy and is developing a spinal deformity because of being unable to move out of abnormal positions, then the use of a sitting brace in conjunction with stretches can be useful.

Extension must be taught as scoliosis is much more likely in children with a flexed posture. 'W' sitting can be used as it gives the spine a stable position. (Probably the only time that a physiotherapist will advocate the position!)

### ORTHOSES

The principles of bracing are provision of symmetry and balance as well as application of three point pressure to correct deformity. Braces must be tight, and fit properly, hence parents must be taught how to apply them properly. Corrective braces must be worn for 23 out of every 24 hours, only being removed for baths and washes. The most commonly used braces at present are Boston, or Boston–type braces, although the Milwaukee brace is still sometimes used.

Ms Coggings finished her talk with a comment on spinal fusion; her analogy was that spinal fusion would have the same effect on the respiratory and cardiovascular system of a severely handicapped child that running a five mile race would have on her and so should not be undertaken lightly!

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## OSTEOGENESIS IMPERFECTA AND ARTHROGRYPOSIS MULTIPLEX CONGENITA

**Mr. J. Fixen, Consultant Orthopaedic Surgeon, Great Ormond Street Hospital**

This is not a bone disease as many parents are led to understand but a disease of collagen. It is not a single entity but a wide spectrum of disorders.

The child will present with some or all of the following problems:–

1. Fragile Bones
2. Joint laxity
3. Bruise easily – capillary fragilities
4. Genetic on Origin
5. Deafness in $\frac{2}{3}$ decade
6. Sclerae sometimes blue

1979 – Journal of Genetics published classification of diseases – 4 Types.

### I Dominant

Brittle bones – can be treated easily
Blue Sclerae
Deafness in $\frac{2}{3}$ decade
Joint laxity
Fractures at 2 – 3 years when child walking

### II Lethal Type

Not usually seen by Orthopaedic Surgeon as few children survive.
Most severe form of disorder show very imperfect ossification of bones.

### III Progressive Deformity Type

This group presents with the biggest problems and they show as the "Small Dwarf People". Normally recessive and can be dominant. Born with fractures. Severe deformities e.g. Scoliosis.

This type of child is not strong enough to operate on but some orthopaedic surgeons do operate but the children usually end up in wheelchairs.

### IV "White Eyes"

These children do not present like typical Osteogenesis Imperfecta and there is no previous family history.

Unfortunately, these children have fractures during the first year and they can be wrongly diagnosed as child abuse or N.A.I. This can be very disturbing for the families concerned.

No blue Sclerotae
Dominant

### Management of Osteogenisis Imperfecta

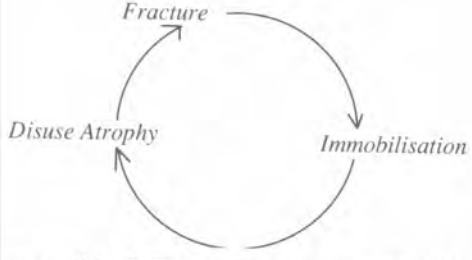
Orthopaedic surgeons now realise that they are only a part of the management of these children and that families need help and guidance in many other areas:

1. Anxiety
2. Severity of handicap
3. Genetics
4. Bowel problems
5. Teeth problems

### Orthopaedic Management

It is very important to break the vicious circle.

### Vicious Circle




Immobilise as little as possible, Calipers and Air Suits are used. Multiple osteotomies with rods are performed.

### Rods

Expanding rods are slow to be used in this country but they have double time of use and less than half the re–operation rate. However, joint stiffness is a problem as they are embedded in the joint. Each end has to be embedded in the epiphysis to allow for the child's growth.

### Spine

Always difficult to manage and a great problem. Management by external or internal splintage.

External splintage results in respiratory difficulties. Internal splintage difficult because the bones are soft.

## ARTHROGRYPOSIS MULTIPLEX CONGENITA

This is a descriptive term for multiple rigid joint deformities.

There are defective small muscles which are not separated from each other. The ratio of tendon and ligament muscle is reversed which leads to rigid contractures. Some surgeons believe that only the upper or lower limbs can be affected but it is necessary to investigate the 'whole child'.

### Features

1. Multiple Rigid Joint Deformities
2. Normal Sensation
3. Defective Muscles
4. Present at Birth

### Incidence

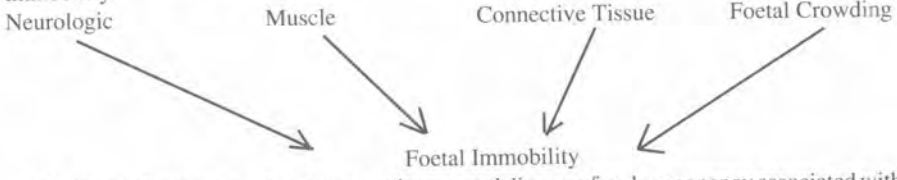
| | | |
|---|---|---|
| High in Helsinki | – | 3 per 10,000 births |
| Edinburgh | – | 1 per 50,000 births |

In 1960 there appeared to be an epidemic.

### Clinical Features

1. Upper or lower limbs affected
2. Appearance 'horrific' at birth – parents despair
3. Multiple Joint Contractures – skin lacks creases
4. Dimples over joints – intrauterine conpression
5. Limbs appear tubular and featureless
6. Webbed Knees and Elbows
7. Trunk – relatively unaffected
8. Congenital anomalies

Biggest task to sort out 'ragbag' of conditions. Dr. Robinson of Guy's produced a summary of recognisable causes. There are certain factors which can produce intrauterine foetal immobility.




Dr. Wynn Davis states 'that it is an environmental disease of early pregnancy associated with one or more unfavourable intrauterine factors'.

All patients showed problems during pregnancy with lack of uterine movement.

**Neurological** investigation is essential before labelling a child as:–

1. Spina Bifida
2. Myelodysplasia
3. Sacral Agenesis

**Syndromes –** Necessary to do chromosome investigation:–

1. Freeman Sheldon
2. Turners
3. Edwards
4. Popliteral Web
5. Moebius

### Connective Tissue

1. Marfans
2. Ehle Danlos
3. Distrophia Dwarf

### Muscle

Hypotonic "floppy" – weak babies
Dystrophia Myotomia
Foetal Myapathy
Foetal Myastheric

This group of children have stiff featureless limbs.

A further check list of paediatric investigations must also be done for correct diagnosis,

e.g. Muscle biopsies
Spine X – Ray
Head Scan

### Orthopaedic Management

**Aims**

Maximum Function
Independent Mobility – walking or wheelchair
Self – Care
a) Feeding
b) Hygiene
Gainful Employment – bright children, good scholastically.

### Management of Deformities

1. Start stretching and splinting as soon as possible in first few weeks of life. Excellent correction can be obtained in some joints. It is helpful for parents to see that something is being attempted on their infant.
2. Muscle imbalance is rarely a problem so muscle transfers are rare.
3. Bony operations must be avoided early in life as they produce deformities with growth.

### Deformities

**Foot**

Shows rigid equinouae – stretching and strapping are rarely successful.

**Operation** – Talectomy usually postponed until maturity.

**Knee** Fixed flexion)

**Hyperextension** - Common deformities

**Fixed Flexion** helped with stretching and serial splinting.
A supra condylar osteotomy can be performed but not during growth.

**Hyperextension** – Stretching but quadriceps plasty usually preformed.

**Hip –** Great Problem. If bilateral leave well alone.

Problems are stiffness - Myositis Ossificans
Supracondylar fractures.

**Upper Limbs**

Shoulder. Always consider with elbow.
Less surgery is being performed now.
Exercise and stretching.

**Elbow**

Consider with shoulder.
Crutches may have to be used so do not lose extension. Never give patient flexion of both elbows and no extension as independence for patient is important.

**Wrist**

Nothing good performed for hand surgically. Early splintage and stretching have best results.
Arthrodesis at adolescence is done if necessary.
The Arthrogrypotic child is a rewarding person to treat but always remember that as a child grows the deformities will occur. This means that long term splintage and supervision of the child is needed for many years.

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# OCCUPATIONAL THERAPY IMPLICATIONS OF OSTEOGENESIS IMPERFECTA

**Alison Wisbeach, Head O.T., Wolfson Centre, London**

**Alison Wisbeach**

Introduced by giving short description of the different types of motor development seen depending on the severity or type of osteogenesis imperfecta.

**Types I, IV** i.e. more mildly affected children follow normal type development.

Supine, prone, rolling, sitting, crawling, walking, standing

Most will follow this pattern but will usually be slightly delayed and possibly further delayed following fractures.

**Type II** Very poor prognosis
Must start working with these parents early to give support as we don't know the exact life expectancy. Some have lived up to 6 years.

**Type III** Long term involvement with the child and family.

**Types II, III**

| | | |
|---|---|---|
| Supine | semi side lying (more functional than supine) | semi sitting preferred because if the child comes up against gravity too quickly there is a danger of scoliosis. |
| | stand up<br>v. few do this stage | sitting<br>bottom shuffling, independent |
| | up into 1/2 kneeling<br>kneeling | May not progress from here. |

These children have a high risk of plageocephaly and scoliosis.

These children are rarely put in prone unless they get there spontaneously and side lying should be avoided because of risk of fracture to the hip.

**General Management of Osteogenesis children**

1. Provide opportunity at every level of development.
2. Build up confidence – very high anxiety levels in parents and child.
3. Take the childs' lead, keep aims realistic. Remember children are often small in stature. Could be more functional in a wheelchair.
4. Hydrotherapy.

**Problems**-family and child

1. Fear.
2. Pain.
3. Risk taking – whose right is it to take the risk?
3. who is it that looks after the child when it fractures?
4. Joint dislocations – due to joint laxity. Shoulders may dislocate if child weight - bears using crutches.
5. Transfer of fractures – upper limbs may fracture if child having to use crutches/ rollator due to lower limb fracture.
6. Rotation of bones
7. Discipline – average intelligence. Often have parents running round after them. Don't get smacked because parents worried about fracturing.
8. Family dynamics – rough and tumble between siblings
   Other siblings may at times want to hit child.

**Management of type III**

Large part of our time is spent with this group.

1. Lifting – a) supporting behind the head with one hand.
   b) shoulder, bottom, and lower spine with other hand.
   Need to lift this way for quite a long time. Certainly until good head and trunk control developed. Always explain the procedure to the child no matter how young he may be.
   Encourage various family members to lift – not just the mother.
2. Nappy changing – do not pick up from the feet.
   need to lift from the hips.
3. Feeding – little and often.
   remember very small therefore less than normal intake required.

4. Alternate side lying – start immediately to balance the head.

### Early parental concerns

Walking
Appearance
Awareness of and treatment of fractures
Size
Schooling
Life expectancy
Why?

### Treatment

**Treat as normally as possible.** Do not treat like cotton wool.

1. Holding upright against shoulder to get head control.
2. Reclined sitting between legs on floor. This is good because often these children have short upper limbs but they can usually support themselves on your legs – don't have to reach the ground.
3. Reclined chair with tray.
4. Upright sitting chair and floor. Be wary of doing this too soon and encouraging a scoliosis to develop. Continually watch for asymmetry. Good position for dressing and fine motor skills.
5. Querie over the introduction of a mobility aide. Should the child be given a trolley to push themselves around on or should they be encouraged to bottom shuffle? The speaker thought both went hand in hand and could be worked on together.
6. Dressing – hip hitching necessary – dressing usually comes with bottom shuffling.
7. Transfers – bottom shuffling helps.
8. 1/2 kneeling – useful for climbing and pull to stand.
9. Standing – the functional advantage of walking is debatable long term.

### Key issues

1. Independence – home environment. The child needs to cope in the outside world. Should their house be adapted early?
2. Mobility
3. Education – most go to mainstream school
4. Equipment.

### Treatment post surgery

Mobilisation as early as possible.
Hydrotherapy.
Weight bearing.
Introduction of aides – space suites – useful because help to regenerate post surgery.
Need to have strong arms.
Should only be used for a short period.
Walking aides.

### Problems with weight bearing

Fear.
Pain.
Fracture and dislocation.

Motivation – who wants them to walk – the child, parent or therapist?
Continuation of therapy.

Discussion was then followed by a very comprehensive slide presentation showing different childrens' wheelchairs, chair, home adaptations etc.

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# LEG LENGTHENING PROCEDURES

**Mr. C.B. Jones, Consultant Orthopaedic Surgeon, United Hospitals, Bath.**

The Lecture was on:

1. The development since 1905
2. Complications

## The Development of Procedures

Cordivilla published papers on leg lengthening procedures in 1905.

He used the stage method and a fairly simple technique. He put a pin in the os calcis, divided the bone, pulled with weights (25 kg). After the fifth day the weight was increased. He was primarily dealing with shortening due to fractures.

1913 Magnuson used counter traction. He pulled against a post.

Both the above used a transverse osteotomy. This meant it was difficult to control the angle of the fracture site. Therefore two different osteotomies were developed. The long sliding oblique osteotomy and the strap osteotomy.

Until 1972 the French used a one stage method in theatre. A pin was placed at each end and the bone pulled apart.

## Problems with one stage lengthening

Infection
Delayed
Sciatic Nerve Palsy
Vascular Insufficiency
Deformity.

This is not a technique used now.

1921. Putti developed the osteoton. This was the first time an external fixator was used and improved control of the fracture site.

1937. Abbott modified the technique to something akin to external fixators used today.

In England Anderson from Edinburgh modified Abbotts technique. Anderson defined the type of osteotomy that should be used.

In 1970's Ambulatory leg lengthening was used. This consisted of two pins above and below which were parted to give traction every day.

Vastiani et al from Vienna introduced distraction. This is where the osteotomy is allowed to partially heal and then this fluffy bone is stretched. Studies are being done on this method by other groups.

## Conventional Leg Lengthening Consists of:

1. Osteotomy
2. Stabilisation
3. Distraction
4. Healing

## Complications of Leg Lengthening

| Stages | Complications |
|---|---|
| Osteotomy | Technical |
| | Sepsis |
| Stabilisation | Technical |
| | Sepsis |
| Astraction | Vascular |
| | Neurological |
| | Soft Tissue |
| | Joint |
| Healing | Delayed Union |
| | Mal Union |
| | Fracture |

### Technical

If the pin is not in the epiphysis the method will not work. The pins are not reusable. If the pin is not in the mid shaft it will cut out.

If the fine wire method is used the pins will cut out at the clamp interface.

### Infection

It is possible to develop a pin tract infection in up to 26% of cases. This usually settles with antibiotics, but chronic osteomyalitis can develop.

### Soft Tissue

Osteomyalitis is rare but may develop in up to 4% of cases.

Compartment Syndrome may develop:

This may be caused by swelling in the compartment which occludes the blood supply to the muscles from the microcirculation. Often prophilactic release of the anterior compartment is needed before healing of the compartment occurs.

### Nerve Injuries

The Sciatic nerve can suffer a traction injury.

The common peroneal nerve can be tractioned as well as it winds round the head of the fibula and cause dropped foot if the stretch on the tibia is too much.

Paresis occurs in up to 26%.

Permanent injury is only 1%.

### Joint Problems

Knee stiffness occurs if the femur is being lengthened.

If less than 60° of flexion occurs at the knee, lengthening should be stopped and movement regained before traction is continued.

Also there is a tendency to plantar flex at the ankle because of the pull of the calf muscles.

### Bone

Delayed union – Rely on vascular epiphysis to produce union.

Non union – Up to 10% of early series.

Mal union – Fracture can occur after distraction.

### Bloodless Lengthening

This is a method developed in Russia, the initial results seem to be favourable.

**Method**

1. Put piris in the growth plates.
2. Put piris in the diaphosed bone.
3. Pull the two bits apart.

The epiphysis can not be relied on to function after this, therefore the epiphysis must not be too juvenile when the operation is carried out. It is a satisfactory method producing masses of bone.

If the distraction rate is slowed down then the growth plate can be stretched and when the traction stops, the plate will continue to stretch.

The advantages are that it is a one operation procedure and there is no risk of non union.

The disadvantages are the complications of knee stiffness and fusion of the epiphysis.

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## ORTHOPAEDIC PROBLEMS IN JUVENILE ARTHRITIS

**Dr. B.M. Ansell, Consultant at the Medical Research Council Rheumatism Unit**
**Mrs. R. Jarvis, Rehabilitation Services Manager, Wexham Park Hospital.**

Arthritis in childhood in Britain used to be named Stills Disease after George Frederick Still, and in Europe several other similar names were given to it, most commonly Juvenile Progressive Polyarthritis. In 1977 a workshop took place, organised by the World Health Organisation and the European League against Rheumatism, to identify criteria so that a "universal language" was being spoken. An agreement to childhood finishing at 16 years was achieved but a common name however was not. Today it is tending to be called Juvenile Arthritis.

Features of Juvenile Arthritis include:

a) onset before the sixteenth birthday,

b) persistent arthritis of one or more joints for a three month period. Active exclusion of other defined disorders such as orthopaedic, haematological and rarer connective tissue disorders, is essential before the label of Juvenile Arthritis can be given to the presenting disease.

There are three main modes of onset of Juvenile Arthritis, with corresponding percentages of presentation:

| | |
|---|---|
| Pauciarticular (affecting four or less joints) | 60.4% |
| Polyarticular (affecting five or more joints in 3 months) | 18.5% |
| Systemic | 20.3% |

The most common presentation by far is pauciarticular onset Juvenile Arthritis with over 60% of cases. The other 1.4% were almost all children presenting with chronic iridocyclitis.

Considering then Pauciarticular onset Juvenile Arthritis; there are at least three subgroups identified:

(i) Girls usually under five years old (ANA positive)

(ii)Boys usually over nine years old (chronic iridocyclitis)

(iii) Others (which may well represent the psoriatic group).

Even though the disease in this category directly affects a few joints, it has secondary effects on other joints and the child's posture. For example, even though a single knee is affected, fixed flexion deformity, valgus deformity or apparent leg lengthening will result in pelvic obliquity and secondary lumbar scoliosis.

The most commonly affected joints together in subgroups (i) and (ii) of Pauciarticular onset

Juvenile Arthritis are the knees, elbows and ankles.

Considering then the knees. If the Juvenile arthritis continues unheeded in the joint, the epiphyses and metaphyses overgrow and osteoporosis occurs. Overgrowth occurs more rapidly on the medial than the lateral side, and so malalignment of the leg occurs.

Recently the first treatment of choice has been a single injection of Triamcinolone into the knee (under general anaesthetic for very young children) followed by intensive physiotherapy. A recent study showed good results, with an increased joint space in X Ray at one year follow-up. Earlier concerns about injection of hydrocortisone directly into joints causing cartilage damage were shown to be unfounded.

Ankles and hindfeet are the second-most common site of Pauciarticular Juvenile Arthritis. If the arthritis continues unheeded a severe valgus deformity of the hindfoot will result, and a change in the shape and size of the foot.

Injection of hydrocortisone into the inflamed hindfoot under general anaesthetic, followed by manipulation of the hindfoot into a corrected neutral position and the application of a walking plaster for six weeks, is an option. If however the hindfoot is not inflamed but deformity only persists, a Dwyers osteotomy of the os calsis (avoiding the epiphyses) is the procedure of choice to resume a neutral position.

If the Ankylosing Spondylitis subgroup the valgus hindfoot is the result of enthesopathies rather than inflammation in the hindfoot. Plantar fascicilitoitis may result in calcaneal spurs large enough to warrant surgical removal.

In unilateral hip involvement, poor hip development and protrusion will mean that Total Hip Arthroplasty is the only option.

If a single finger is involved, injection of hydrocortisone into the tendon is of great benefit. Tiamcinolone is too strong and may result in skin atrophy.

In wrists the radioulnar joint is an area of great problem. The radius overgrows and the ulna fails to grow resulting in ulnar deviation and so restricted extension. Injection of hydrocortisone into the radioulna joint before the cortex erodes has shown good results. If the ulna undergrowth is sufficient, ulna lengthening may have to be performed.

The prognosis of children with Pauciarticular onset Juvenile Arthritis is, in subgroup (i):

70% will be in remission at 10 years from onset,

5% will remit and relapse,

10% will continue with an active pattern (of more than 5 joints but not extending to a polyarticular picture),

10% will extend to more than 9 joints.

As the long-term prognosis for the vast majority is good, it is vital that they reach remission without the sorts of deformities and need for surgery such as we have discussed.

In subgroup (ii):

55% will go into remission,

45% will remain with some activity.

In this subgroup it is necessary to watch their spines at regular intervals until the end of growth for signs of reduced mobility.

**The aims of physiotherapy management following surgery are:**

–To maintain muscle power and function

–To maintain joint mobility and function

–To prevent deformities

–Rehabilitation

Even though the child may be having surgery to only one site, it is important to remember

that Juvenile Arthritis involves other sites either directly or indirectly. Not frequently in this group (Pauciarticular onset) but more so in the others, neck and jaw involvement may result in reduced mobility and so anaesthesia difficulties. Unless of the seropositive polyarticular group, pre-operative management will include active-assisted and active neck movements, particularly into extension, and jaw movements.

Following injection of Triamcinolone into a knee, management includes: 24-48 hours of 'rest with exercise', that is relative rest for the knee – in a backslab at maximum extension of the knee, combined with regular and frequent static quadriceps contractions and several sessions out of the backslab to allow active-assisted knee flexion. Hot packs are applied to the knee after 24 hours to help reduce muscle spasm. After 48 hours, the child begins resisted quadriceps exercises (best performed with combined contraction of the gluteals, by applying sling/spring resistance behind the knee with the child in lying), and formal exercises in water. Backslabs are retained for night use, but if the quadriceps are very weak, they may be used when starting dryland walking, and are weaned off as strength increases in time. Standing and walking rehabilitation can also begin in the water. Tricycling is also encouraged to combine knee flexion with improvement in quadriceps power. If the affected leg has overgrown, a shoe raise (to both heel and sole) is applied to the shoe of the unaffected leg sufficient to equalise leg lengths, thus allowing full extension of the longer leg's knee and preventing a secondary scoliosis resulting.

Following injection of local steroid into a single finger, the exercises must be performed correctly. It is a common mistake to allow the child to leave the index finger high when clenching the fist and so not flexing at the metacarpalphalangeal joint.

Following injection of local steroid into the wrist or radioulnar joint, the wrist will need day and night splinting in functional extension and neutral to deviation.Mobility of fingers and thumb within the splint should not be at all restricted or else secondary restriction of movement will occur.

In the Ankylosing Spondilitis subgroup, after any surgical procedure, either local steroid injections of joints or a total hip arthroplasty, it is vital to retain/regain spinal and hip mobility, particularly extension. As previously stressed, their spines require regular checking.

Now considering the Systemic Onset Juvenile Arthritis; it is the type which takes up most medical and paramedical time of any of the groups. Onset usually occurs between the ages of one and five years and girls and boys are affected in equal numbers. They are usually admitted acutely unwell, miserable and with lymphadenopathy and possibly spleen, liver and cardiac involvement. Joint involvement may not occur for several weeks after onset of systemic features. 50% have a single systemic episode followed by joint involvement, 35% have several systemic episodes and joint involvement, and 15% have one/more systemic episodes and chronic/extending joint involvement. All children with systemic onset Juvenile Arthritis for long periods will have growth retardation and alteration in the development of peripheral joints.

40% of children with systemic onset Juvenile Arthritis have hip involvement. Hips are one of the major problems in the orthopaedic management of this group. If a joint space exists (checked by arthrogram) and the hip is not 'fused', a Soft Tissue Release may be required, where division of the psoas and adducotor muscles correct the flexion – adduction deformity, and with the use of the hip in the correct position to take a total hip replacement if necessary.

Difficulties with a Total Hip Replacement include narrow femoral shafts, poor quality bone stock, persistent femoral anteversion and straight femoral necks.

If hip involvement does not occur until after the age of seven years, the hips usually develop well but tend to protrusion.

Femoral osteotomy is only very rarely required in hips where there is a tendency to outward subluxation.

In Polyarticular onset Juvenile Arthritis it is the knees which are the major orthopaedic problem. If the knees have large amounts of soft tissue swelling they tend to subluxation, that is backward subluxation of the tibia on the femur. Serial splinting of subluxed knees will make them worse. Posterior Soft Tissue Release of the knee may therefore be required.

The patello-femoral joint is often the major reason for persistent fixed flexion deformity of the knee and is a frequently forgotten joint. The patella in Juvenile Arthritis tends to widen and flatten and can adhere to the femur. Lateral release of the patella is recently having an 80% increase in successful results following the introduced use of the Continuous Passive Motion machine post-operatively.

If knees are valgus and in fixed flexion on an older child, supracondylar osteotomy is required.

If there is hindfoot involvement, local steroid, which is not generally of much use in Polyarticular onset Juvenile Arthritis, may be injected into the tarsal joints under general anaesthetic. The hindfoot is manipulated into a neutral position and maintained in a walking plaster for six weeks. Following removal of the plaster, the foot is remobilised with the use of a caliper for support.

If there is flexor tendon inflammation in the hands, hydrocortisone injection into these tendon sheaths under general anaesthetic will assist to start improvement in mobilisation of the hands by damping down the activity locally for a short while. (The photocopying machine is an excellent means of recording finger flexion/extension ranges.)

Seropositive Polyarticular onset Juvenile Arthritis is the childhood equivalent of the adult rheumatoid disease. It has an erosive and stormy disease, and 30% of cases do not respond to the slow-acting drugs. In a recent study, 50% of cases had had at ten years from onset at least two arthroplasties. Atlanto-axial subluxation occurs early and rapidly, and so any neurological signs should be immediately investigated. Total Knee Replacements are common in this subgroup as rapid erosion means Soft Tissue Relase or Osteotomy are of little value. Shoulder arthroplasty is still in its infancy and an 'option of the future'. Elbow replacement is an occasional occurrence, particularly in elbows which have 'fused'.

Physiotherapy management following surgery in the systemic and polyarticular groups, even more so than the pauciarticular group, includes general exercises and management of the rest of the body.

Following injection of steroid into flexor tendon sheaths of the hands, ultrasound therapy is given daily for ten minutes to the palm and fingers and followed by application of ice packs and active exercises to each individual joint. An overpressure stretch is applied also to each joint range.

Following injection of local steroid into the wrist, the wrist is maintained in a day and night splint in neutral deviation and functional extension, until the wrist has adequate functional power. The wrist may require to be serially cast in plaster before a good position can be achieved for the permanent splinting.

Following Soft Tissue Release of the hip, post-operative physiotherapy management is vital to its success. The child is placed on bilateral hip traction in abduction immediately following surgery and begins active assisted exercises on the hips from Day One. The exercises concentrate in particular on extension, abduction and external rotation and become active and then resisted as power increases. The flexors and adductors require stretching for a long period of time post-operatively to prevent shortening with contracture of subcutaneous scar tissues. Their management also includes regular periods of prone lying each day. Weight bearing mobilisation is usually begun after removal of sutures, but if begun too soon, when the power of the muscle groups about the hips is insufficient to maintain the corrected position, the child

will 'waddle' and assume a bad habit. Walking aids, such as gutter crutches, may be required to aid mobilisaiton. Hydrotherapy is introduced after the removal of sutures for formal exercises and stretching and gait reducation. Night traction is required for at least twelve months following soft tissue release. The home traction unit is available commercially to fit all makes/shapes of beds.

Following Total Hip Replacement, many of which are now being done under epidural, the child returns in a backslab or cylinder in full extension. Active assisted exercises for quadriceps and hamstrings begin on Day One out of the splint. The child also has periods on the Continuous Passive Motion machine to aid knee flexion. With the removal of sutures, hydrotherapy is introduced for formal exercises and gait reeducation. The backslabs are retained for night use for a long period post-operatively. Tricycling is also of great benefit. Gait reeducation is essential on dry-land also.

Following supracondylar femoral osteotomies, active assisted exercises begin immediately after removal of plaster. The patella needs to be mobilised before pushing for knee flexion.

In summary, following surgery a child with Juvenile Arthritis needs:

- time and intensive physiotherapy, and all should be prepared for this,
- good splinting and exercises,
- functional reeducation.

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## SHOULDER INSTABILITY

**Inge Newton, Royal National Orthopaedic Hospital, Stanmore.**

Ms Newton began her talk by giving us a quick anatomy lesson, which had us all struggling back to our student days! She then went on to describe 'habitual dislocation of the shoulder' in which she is particularly interested.

**Presentation**

- usually presents in adolescence, but has been happening for years.
- no history of trauma, or pain.
- reproduceable and demonstratable.
- often a psychological disturbance present.
- no change on X ray, or arthroscopy.
- EMG; muscle dissociation is abnormal.

**Aeitiology**

The cause is not really known, but is probably due to muscle inbalance acquired by:

a) being pushed hard at sport at an early age.

b) young children who, having learnt that they can 'click' their joints in and out, continue to do it for attention, or for fun, until it becomes unconscious.

**Assessment**

- must have a full history of the dislocations, i.e. how often, why, when and how; 'the pattern of dislocation'
- investigations and results.
- observation of muscle wasting.
- muscle power and use of accessory muscles.
- function.

### Treatment

It is very important to communicate clearly with the patient what has happened, and why, and to reassure them that surgery is not necessary.

Aims – to stop dislocations and to return to normal function.

Means – Maitlands mobilisations to free the shoulder joint.
Biofeedback to re-educate the muscles.

### Biofeedback

Two electrodes are used, one applied to the muscle belly, and one more proximally. Electrical stimulation is then given to increase activity in the antagonistic muscles, and therefore relax the hyperactive muscle.

The initial setting of the machine can be difficult, but once the optimal stimulation is achieved, isometric muscle work is used. This is progressed to isotonic muscle work.

In conclusion, Inge said that habitual dislocation of the shoulder is now accepted as a diagnosis, and that conservative treatment is now accepted as the correct treatment leading to normal activity, and a normal shoulder.

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*The following article has been reproduced by kind permission of the Joint Council for the Physically and Mentally Disabled (Rehabilitation Division, Hong Kong Council of Social Service), from their Newsletter entitled 'Conductive Education in Hong Kong'*

## DEVELOPMENT OF CONDUCTIVE EDUCATION IN HONG KONG

### Forword

As there have been several requests from abroad to describe how Conductive Education developed in Hong Kong, it was found advisable to compile this article.

By now there must be about one hundred people here in Hong Kong who support Conductive Education in one way or another. Regrettably not all of these dedicated people could be named in the following article. We hope to make up for this by gradually describing various Conductive Education groups, working places, the activities of the "Working Group on Conductive Education" and other related matters.

### Introduction

Hong Kong has in the last two decades expanded its rehabilitation services in a determined way as Government felt more responsible for caring for the disabled; previously it had been left to a great many voluntary agencies to struggle for the provision of basic facilities for the disabled.

Therapists' professional training in Hong Kong followed mainly the English modality of treatment and for some time the Bobath approach for neurologically impaired people was used almost exclusively.

Nurses responsible for large wards for mentally and physically disabled children in hospitals early on realised the need for a comprehensive intervention programme.

## Historical Development of Conductive Education in Hong Kong

Already in the 1970s some of the rehabilitation workers in Hong Kong heard about Conductive Education, mainly through Ester Cotton's early articles and her slide/tape series on Conductive Education (Graves Audio Visual Library), and also through short descriptions of Conductive Education in various professional books.

Within the framework of a course on cerebral palsy the first lecture on Conductive Education was given in 1973 at the Hong Kong Government School of Physiotherapy by Anita Tatlow, physiotherapist. She based her talk on early articles by Ester Cotton and publications by Luria, the Russian neuropsychologist.

In 1974 two members of the Council of the Spastics Association of Hong Kong, Miss B. M. Kotewall and Mr. E. Kvan, visited those centres in England beginning to apply the principles of Conductive Education.

In the late 1970s, Marion Fang, Special Principal, visited the Conductive Education Unit at Ingfield Manor School in England for one week, where she met Ester Cotton and observed pre-–school, dormitory and school programmes.

Sister Joan O' Connor, RN, was the first Hong Kong person to attend a Conductive Education course in England in November 1980 and to follow it up by participating in the practical work at the Spastics Society's Conductive Education Unit at Ingfield Manor School.

With hindsight it is interesting to note that Dr. Lui Wai–ying in Spring 1981 presented a longitudinal study on cerebral palsied children in Hong Kong and found that after rehabilitation work "functioning levels were still generally poor". Therapists and nurses also observed this and started to mention it.

Meanwhile, having returned to Hong Kong, Sister Joan O' Connor in September 1981 initiated a Conductive Education group for the mentally and physically disabled children at Caritas Medical Centre. Sister Nora Yen, RN, was in charge of the ward and she also participated in the work; she had learned about Conductive Education in 1975 in England while attending a course on mental handicap. Two months later, in November 1981, in connection with a Rehabilitation International meeting in Budapest, Hungary, Fr. John Collins visited the "Institute for the Motor Disabled and Conductors' College" in Budapest, and on his return to Hong Kong he described it in a talk. Dr. Harry Fang, then President of Rehabilitation International, visited the Institute in that same year.

In late 1981 Janet Steel, physiotherapist, introduced Conductive Education to the Wong Tai Sin Disabled Children's Centre of the Spastics Association of Hong Kong and Barbara Emsley, occupational therapist, joined her in her work. In the John F. Kennedy Centre, Anita Tatlow had tried to use Conductive Education since 1979. For some time, these groups of people worked in isolation, without knowing much of each others efforts.

This changed however, when in January 1983, shortly before her return to England, Janet organised the first workshop on Conductive Education, which was attended by about 25 people. From then on there was close contact between the people who tried to introduce Conductive Education and gradually the decision was taken to invite Ester Cotton to come to Hong Kong.

About a year later, in March 1984, Ester Cotton came to give the pioneering "Introduction to Conductive Education for Disabled Children Course", which was organised by Barbara Emsley and Nicola Hunter, physiotherapist, and sponsored by the Spastics Association of Hong Kong and the Hong Kong Red Cross. This 2–week course was attended by 25 people from many professional disciplines.

In the same year Mrs. Chong Wong Chor Sar, General Secretary of the Spastics Association of Hong Kong, went to see the "Warashibe Institute of Conductive Education" in Osaka, Japan; Sister Joan O' Connor visited the Institute in Budapest and in October 1984 Anita Tatlow

attended the "First International Seminar on Conductive Education" in Budapest, to which people from 18 countries came. This 3–day seminar was jointly organised by the Institute and the International Cerebral Palsy Society (U.K).

Regular educational sessions were held throughout the year 1984/85 to sustain the momentum of Ester Cotton's first course.

Conductive Education groups were then running in the Caritas Medical Centre, at the John F. Kennedy Centre and at some of the schools and centres of the Spastics Association of Hong Kong. The Chairman of this Association, Mr. Erik Kvan, and General Secretary Mrs. Chong Wong Chor Sar, early on fully supported Conductive Education and created a groundswell of interest for this innovative approach. They then took the imaginative step of employing Sister Joan O' Connor in September 1984 as their "Conductive Education Programme Coordinator" and this made it possible to set up several Conductive Education groups both in their pre–school centres and in their special schools. There were groups in the Association's Wong Tai Sin Disabled Children's Centre, Ting Hsiung Chao School, Ko Fook Iu Memorial School, Elaine Field School and Shek Yam Pre–school Centre.

At the Sir Robert Black College of Education, Special Education Department, some lectures on Conductive Education were included in the curriculum of the training course for teachers of physically handicapped children.

Although an increasing number of people had then heard about Conductive Education and could observe its effectiveness, many rehabilitation workers found it impossible to use it properly due to limitations of expertise, manpower, space and resources.

Around this time professionals also became increasingly aware of the fragmentation of services for the disabled and of the many problems arising from using different, at times contradictory treatment methods within the multi–disciplinary team. Based on such and other considerations, Dr. Harry Fang, Chairman of the Joint Council for the Physically and Mentally Disabled, thought that Conductive Education should become known throughout Hong Kong and he therefore took the farsighted step to invite Ester Cotton to return to Hong Kong for a whole series of courses.

Marion Fang, Principal of the John F. Kennedy Centre and Chairperson of the Hong Kong Special Schools Council, became the Chairperson of the "Organising Committee on the Conductive Education Courses" which undertook the task to organise the five courses of varying length Ester Cotton gave from January–March 1986. The courses were sponsored by the following organisations:

- Joint Council for the Physically and Mentally Disabled (Rehabilitation Division, Hong Kong Council of Social Service).
- Hong Kong Special Schools Council
- Hong Kong Society for Rehabilitation

Members of the supporting organisations who formed the "Committee on Conductive Education Courses" also organised a 2–week "Conductive Education for Adult Hemiplegia Course", held by Rowena Kinsman, physiotherapist. This course was sponsored by the :

- Joint Council for the Physically and Mentally Disabled (Rehabilitation Division, Hong Kong Council of Social Service).
- Hong Kong Society for Rehabilitation
- Tung Wah Group of Hospitals.

In addition to the 170 people who attended these six courses, both lecturers also held several public seminars which were well attended.

In preparation for the courses, staff members of the "Conductive Education Development Group" of the Spastics Association of Hong Kong under the leadership of Sister Joan O' Connor

with Vicky Tsang, occupational therapist, as coordinator of the translation group translated Ester Cotton's two booklets "The Basic Motor Pattern" and "The Hand as a Guide to Learning" into Chinese.

There were several press reports on these courses and Ester Cotton was interviewed for the "News Bulletin" of the Hong Kong Physiotherapy Association. In this interview she mentioned that the "work done by Sister Nora Yen at Caritas Medical Centre will become one of the milestones in the work with the profoundly handicapped. The children are now showing completely different behaviour compared to the other children".

**Working Group on Conductive Education**

After the course, in Summer 1986, sufficient interest had been generated to propose the formation of a "Working Group on Conductive Education" under the Joint Council for the Physically and Mentally Disabled (Rehabilitation Division, Hong Kong Council of Social Service).

The terms of reference of this Working Group are as follows:

- To promote the concept and application of Conductive Education in Hong Kong
- To identify areas of service where Conductive Education can be most appropriately applied
- To adapt the concept and approach of Conductive Education to the local environment and the needs of our disabled population
- To strengthen the knowledge of Conductive Education among local rehabilitation workers
- To be accountable to the Joint Council for the Physically and Mentally Disabled for its work

The office bearers of this working Group are:

- Chairperson, Miss Marion Fang
- Vice–Chairperson, Sister Joan O' Connor
- Convenor of the "Sub–Working Group on Training", Mrs. Anita Tatlow
- Secretary, Miss Alice Cheung

The Sub–Working Group aims at:

- Organising educational sessions
- Collecting information/resource material
- Publishing a Conductive Education publication
- Promoting other related matters

The publication's name is "Conductive Education in Hong Kong" and it will come out in booklet form twice a year in both English and Chinese. The editor is Anita Tatlow.

Work is proceeding in all the above mentioned areas and the response to the educational sessions has been very good.

The Spastics Association of Hong Kong is using Conductive Education increasingly; new groups have been set up in Apleichau Pre–school Centre, and they also plan to set up groups in their newly opened pre–school centres in Shek Kip Mei and Lung Hang. The Association has also published another book "Let's Work with Songs" (1987) written in Chinese, with illustrations and a foreword by Ester Cotton. This work was carried out by staff members of the Association's "Conductive Education Development Group" with Jeanette Ng, occupational therapist, as the coordinator.

The Hong Kong Physiotherapy Association published a Journal "Special Issue: Conductive Education" (1986) edited by Anita Tatlow with contributions by Ester Cotton, Sylvia Opper, Nora Yen, Rowena Kinsman, Margbaret Campion and Lillemor Jernqvist.

A new Conductive Education Group has been started in the Caritas Medical Centre and in the John F. Kennedy Centre several new groups have been set up. All in all, Conductive

Education is now used in at least 10 places and there is a wide variety of groups, ranging from whole day Conductive Education management for pre–school boarders to short sessions once a week (with follow–up at home); from working with young infants to adults who did not respond to traditional treatment methods; from mainly physically to both physically and mentally disabled and from children with athetosis to those with hemiplegia.

However, Conductive Education for adults with neurological disorders is only developing very slowly, Cecilia Webb, Clinical Coodinator of the Physiotherapy Section, Institute of Medical and Health Care, Hong Kong Polytechnic is encouraging the inclusion of this "new" approach in the clinical education for undergraduate physiotherapy students, Pollinna Ip, physiotherapist, United Christian Hospital, Marilyn Chui, physiotherapist, MacLehose Medical Rehabilitation Centre, and others are trying to use it in a clinical setting.

In summer 1986 Sister Joan O' Connor, Vicky Tsang, Josephine Kwok of the Spastics Association of Hong Kong, and Wance Kwan of the John F. Kennedy Centre, visited the "Warashibe Institute of Conductive Education" in Osaka, Japan.

The rapid development of Conductive Education for children in Hong Kong from 1984–1986 coincided with a renewed interest in Conductive Education in England and other countries. Scanning the amount of publications on Conductive Education published over the last 20 years outside Hungary there is a peak in just the 1984–1986 period. This great interest in Conductive Education is likely to continue as the Institute in Budapest is now for the first time giving six–week courses and more people study it for prolonged periods at the Institute. Dr. Hari's article "Conductive Education Interest Group and now called Conductive Education Association (England) the examples Ingfield Manor, Rutland House and Percy Hedley School offer, the book "Conductive Education – A System for Overcoming Motor Disorders" \by Philippa Cottam and Andrew Sutton, video films about the Institute in Budapest and the Australian Conductive Education Newsletter have all given support to Hong Kong Conductive Education practitioners by consolidating their knowledge and stimulating their interest.

Most convincing, however, is the effect Conductive Education has on the disabled children; the alertness the children show in group situations, their will and ability to be active and independent, and the possibility for an effective carry–over into all situations of daily living.

The professional satisfaction and stimulating interdisciplinary work of the rehabilitation workers involved should also be mentioned.

As Hong Kong is a pragmatic and flexible place within a small geographical area and has a group–orientated society it might be a suitable environment for Conductive Education to thrive and develop further.

**Spring 1987**
**Working Group on Conductive Education**
**Sub–Working Group on Training**

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# 'SOMEWHERE TO PLAY' – AN ADVENTURE PLAYGROUND FOR MID ESSEX HEALTH AUTHORITY

Moulsham Grange Children's Treatment Centre is situated in London Road, Chelmsford, and belongs to the Mid Essex Health Authority. It has recently been the lucky recipient of an adventure playground for use by the children with special needs who attend the Centre.

*"Some of the playground equipment"*

The playground was the joint venture between the Essex branches of The National Playing Fields Association and the Essex Physically Handicapped Association, who pioneered a mammoth fund raising campaign for the overall sum of £57,000. The playground comprises of seesaws and tree houses which are accessible by wheelchairs, and many other features which have been designed to encourage the children to develop and enjoy their senses of hearing, touch and smell.

Moulsham Grange is a converted Victorian house with a large garden, and provides a perfect setting for adventure and nature trails, a sound maze, tree swing, pergola, herb garden and waterfalls.

The adventure playground, built to Dutch design by Kompan (UK) Ltd, is thought to be one of the first in the UK; it was officially opened by Sandy Gilmour, Chairman of the National Playing Fields Association, and handed over to the Chairman of Mid Essex Health Authority, Mr. Bryan Littlewood Mid Essex Health Authority will be responsible for the maintenance of the adventure playground, which will be made accessible, by pre–arrangement, to physically handicapped children throughout Essex.

# ABSTRACTS

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|---|---|
| **Title** | **The Role of Conventional Physiotherapy and Cystic Fibrosis** |
| **Authors** | **John H. Reisman MD, Betty Rivington–Law, B.Sc., Mary Carey MSc., Jacques Marcotte, MD, Eleanor Wannamaker, Dip PT, Dawn Harcourt, MSc and Henry Levison, MD Respiratory Diseases Research Institute of the Hospital for Sick Children, Toronto, Canada.** |
| **Source** | **Journal of Paediatrics Oct 1988 Vol. 113 No. 4. pp, 632–636** |

A three year study was undertaken to compare the long term effects of two contrasting methods of chest physiotherapy in the treatment of cystic fibrosis – one being the conventional method of postural drainage, percussion and forced expiratory technique (FET), this other being FET alone.

As the main object of the study was to determine whether the rate of deterioration differed with the alternative methods of physiotherapy so subjects with only mild to moderate pulmonary disease were chosen. Eventually sixty–seven subjects were enrolled aged between 7 and 21 years with FEV, greater than 40% of predicted value for height and sex. These being divided into two groups.

All subjects were carefully taught the method and rationale of their treatments with emphasis on the importance of deep breathing with maximal expiratory effort throughout their inhalation therapy and FET. One group was then instructed in conventional methods of PD, percussion and FET – the other using FET alone. All subjects were advised to participate in as much sport and physical activity as they were able. They were all given written outlines of their specific protocol and asked to keep a diary.

Everyone was followed up every 3 months, if acute exacerbations occurred, they were admitted to hospital and treated with vigorous physiotherapy. Pulmonary studies were performed twice a year – X–rays every 6 months – both PA and lateral, and exercise tolerance tests were performed yearly.

The results of the study were felt to demonstrate that the subjects who performed FET alone had a significantly greater degree of decline in their FEV, than the group performing conventional physiotherapy.

It was felt this suggested the long term course of pulmonary function is adversely affected when conventional physiotherapy is abandoned. It was considered impossible to provide a predictive profile of pulmonary decline if conventional physiotherapy is abandoned. The facts that trigger this decline are still poorly understood.

Exercise programmes are not considered a suitable substitute for physiotherapy and the authors conclude that conventional physiotherapy should remain a standard part of the treatment of cystic fibrosis.

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| **Title** | **Characteristics of social reactions between mothers and their disabled infants: A review.** |
| **Author** | **Sally J.Rogers Ph.D, University of Colorado Health Sciences, USA.** |
| **Source** | **Child Care, Health and Development 1988 14 (301 317)** |

Parents of handicapped children are often expected to be the home "teacher" and provide developmental objectives or physical therapy. This type of interaction is so far removed from

normal patterns of mother/child interaction that questions are now being raised on the effect of the mother/child relationship and the disabled infants social development in these situations.

This paper examines the characteristics of relationships of young handicapped children and their mothers when playing – it is felt crucial that professionals are aware of these and the needs of parents so they can assist and not add to their problems.

### Interactional Characteristics of Disabled Infants

As a group, handicapped children appear to provide fewer cues to the mother. The cues are not as clear or as easily interpreted, they tend to vocalise and smile less frequently, avert their gaze, and ignore social stimuli. The positive results such as smiling, laughing are fewer, the negative cues are more frequent than in the normal child, such as frowning, crying etc. However the baby with Cerebral palsy tends to smile more frequently than other types of handicapped children, possibly the attempt of a totally dependant child striving to keep the mother's attention. One other characteristics stressed are poor turn taking, sharing and little initiation of social reaction.

### Interactional Characteristics of Maternal behaviour

General finding across several long term studies have consistantly demonstrated that mothers of handicapped children are more socially active and attempt to initiate more reactions from their children than mothers of normal children. This high level of maternal activity can result in some children in averting the gaze, squirming and crying in order to end the over stimulation.

The High levels of maternal activity tend to change in time – mothers of disabled toddlers appear to withdraw in play activities and ignore them more than those with normal toddlers. Levels of play and the pleasure gained from this activity are discussed as is the way mothers adapt in a positive way to the handicapped child's differing responses. The effect of a diagnosis on maternal behaviour can lead to a subtle alteration in the mother's style of interaction with her child who reciprocally responds in altered manner.

The necessity for professionals working with mothers to be aware of these characteristics is stressed – it is strongly encouraged for them to become familiar with methods for assisting both mother and child to develop more reciprocal social and enjoyable interactions and not add to the problems that are already present.

## BOOK REVIEWS

### The Education of Children with Motor and Neurological Disabilities

*Simon H. Gaskell and Elizabeth K. Barrett – Chapman and Hall, £10.95*

This book outlines the educational difficulties of children with motor and neurological disabilities. Recent research programmes on the reasons for such difficulties are outlined, together with the rationale behind some educational theories.

The book divides into four main sections. The first two describe major handicapping conditions, both medical and perceptual. Normal child development is outlined, as is the normal development of the structure and function of the brain.

The third section attempts to relate the conditions to educational matters. Four basic subjects are specifically examined, namely, reading, arithmetic, spelling and handwriting. Difficulties encountered by children in these fields are discussed along with ideas for successful remedial measures.

The final section describes educational provision for such children in different countries, including a detailed account of conductive education as practised in Hungary.

With a large bibliography and a glossary of medical terms, this book is very stimulating and provides a useful basis for further reading for anyone interested and involved in the education of children with motor and neurological disabilities.

Gillian Riley, Supt. Physiotherapist.

## The Education of People with Profound & Multiple Handicap – Resource Materials for Staff Training

**Judy Sebba**

*Manchester University Press in association with B.I.M.H. £16.95*

This well presented book is intended to be used as foundation material by tutors planning and running courses on the Education of People with Profound and Multiple handicaps, for educational staff in ordinary and special schools. However, its clear text and mass of factual information will be of interest to all disciplines working in this field, indeed, it should help readers towards a deeper understanding of the client group and their problems.

The emphasis on a positive approach to the clients skills rather than a negative one, and the necessity of accurate assessment and curriculum planning, in association with all other disciplines involved will gladden the hearts of many people working with these clients.

The various sections of the book cover Assessments, Teaching Methods, Microelectronics, Organisational Issues, Auditory, Visual and Physical Development, Communication, and Problem behaviour. Each section having Tutors notes. References and suggestions for further reading Three appendices give lists of selected references and addresses for specialised equipment.

The recognition of problem behaviour in people who are profoundly and multiply handicapped is refreshing, and underlines the honesty of this informative book, which presents a learning model not only for those at whom it is aimed but many other disciplines also.

J. E. Lamond

## The Development of Mature Walking

**D. Sutherland, Olshen, E. Biden, M. Wyatt**

*Pp 227: Hardback*

*Blackwell Scientific Publications/Mackeith Press 1989*

*ISBN 0–632–01902–6*

Sophisticated study of the gait of 309 normal children in 10 age groups from 1 – 7 years makes a formidable story. Altogether 449 recordings were made on the volunteered subjects, over 90% of whom were white Caucasians. The data and graphics presented may well become the basis for a future 'expert' system for gait analysis in children. This would be a 'black box' capable of collecting, processing and interpreting the data on which clinical decisions can be made. Though the San Diego laboratory is among the most advanced in the world, their computer has had to deal with so much data that the turn–around time has been a problem. That will speed up. The difficult part will be programming the interpretation which depends on evidence for effective treatment of particular abnormalities of motion, electromyography and force.

Some clinicians may find that the book offers more than they want to know about gait. There are 87 figures, 13 tables and 5 pages of recording charts. One figure includes 24 graphs. In the middle of the book there are 80 pages of continuous figures. The complexity of the data is illustrated by the 6 pages explaining their mathematical treatment. The formulae underlying their 'bootstrap' technique are beyond the comprehension of a reviewer more familiar with shoestring methods.

Their anthropomorphic data are easily assimilated and helpful. The gait analysis system uses 4 motion picture cameras, a force plate and electromyography linked to a mini–computer. As a scientific study this monograph is a landmark. Departments of bioengineering, gait labs, physiotherapy teaching schools and academic departments of orthopaedic surgery and paediatric neurology will find it a classic source of reference. If the next 10 years bring the data justifying its cost–effectiveness, this approach will have been vindicated.

Ian McKinlay.

## A. P. C. P. CONFERENCE 1989
## ANNUAL REPORT 1989

As we come to the end of this 16th Annual Conference, we can look back over the past year to see where we have been and look forward to where we are going in the next 12 months.

We have had our 4 full committee meetings. As I told you last year, they become longer with many additional items to be discussed in order to find our way forward.

The meetings begin at 11.30, but much vital exchange of information takes place during the sandwich lunch.

We have found it extremely useful to extend the day by holding a meeting of the Regional Reps. with the P.R.O. during the morning. Elma Bell initiated this at the committee meeting prior to last years' conference, and it is now firmly part of the days proceedings. I believe it to have been of enormous value to both the regional reps. and to the P.R.O. In this slot we have found it useful to have various members of the executive committee. Last time we met with Judy Meade from the C.S.P. to discuss the document 'Good Practice'.

The subcommittee on Good Practice has continued to meet and the guidelines have been produced. These are now almost ready for publication in the summer. In the meantime, the subcommittee is taking part in a workshop run by the C.S.P. for Clinical Interest Groups to formulate their guidelines for good practice.

While thinking of the C.S.P., I can tell you that the A.P.C.P. has recently learnt that we have been recognised by the CSP as a validated specific interest group. We were one of the first groups to send our application in and having fulfilled the criteria were granted recognition.

During the past 12 months there have been many extra meetings to send members to represent our views. In November two representatives went to a preliminary meeting to discuss W.C.P.T. to be held in London at the Barbican in the summer of 1991. This is an exciting event and a subcommittee has been formed to follow up and organise how A.P.C.P. will be involved. Conference may well be held in the summer that year.

We had representatives of a C.S.P. meeting on physical disabilities. A document 'Welfare of Children in Hospital' was circulated and several members commented upon it. Last year Jenny McKinlay was involved in a seminar on Preschool Child Surveillance. This has been followed up by a book 'Health for all Children' published in February and leading to more seminars during the next 12 months around the country.

The Editorial Board met twice under the new editor, Jenny McKinlay. The newsletter continued its high standard of information and future titles are already listed. Jenny allows no slacking of her editorial board members and written requests and telephone calls are often made. Our newsletter continues on a quarterly basis and plans have been made to cover a wide range of topics over the next 12 months. You, our readers, are encouraged to write and tell us about your work in the field of paediatric physiotherapy so that we may disseminate information

Members of National Committee and London Committee meet together.

nationwide. We wish to forge links with other professions in the paediatric world, and know that this is a medium through which we can succeed.

At this point I would like to thank Elma who regrettably is retiring as P.R.O. although she still has two more years on the committee and I do hope she will feel able to serve as a committee member until her official term of office ends.Elma has been PRO for several years and has kept us on our toes! She has been most supportive at all the meetings and at conferences. She was responsible for producing the stand which has been well used at the various conferences, including the CSP annual conferences.

Mary Clegg, our Post Registration Education Committee spokesman has been very busy recently with the latest 'Introduction to Paediatrics' Course. My thanks to her for her dual role as Vice Chairman and leader of the Education subcommittee. This is a very important aspect of the way forward for all physiotherapists these days, and particularly for our paediatric group.

We are being asked increasingly to become involved in legal assessments for court cases. Several members are currently involved and have been approached by the legal authorities. Anyone who feels they would like to be considered for this, send their C.V. to Chris Young, who holds the list of names.

My thanks to all the members of the committee for their continuing support. The Regional Reps. who are the lynch pin and contact between the members in the regions and the committee. they do a valuable job in a two way dialogue. It is always a joy to be greeted by the various members from throughout the country.

Especial thanks to Jeanne Lamond, who has taken over the task of Membership Secretary., This is a major undertaking especially for the few months between subscriptions being due and conference when the majority of renewals are made. Please send the correct amount of money – £12.50 – and clearly write your name and address.

My thanks to Jill Brownson who reliably copes with the post of Treasurer and interprets the accountants' jargon and instructions to keep the accounts in good order.

Especial thanks to Chris Young who has taken over the post of Secretary. She is a tower of strength and keeps me in order. My personal thanks to her for her patience and support.

Maggie Diffey
Chairman

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## Summary of Minutes of National Committee Meeting held on 30.3.89 at Guildford

At this meeting there was much correspondence to be addressed. This included a letter from the Association of Teachers in Physiotherapy requesting information on paediatric physiotherapy research projects for publication in their newsletter. The committee felt we should request an exchange of newsletters with mutual permission to use material. The Committee also considered a letter from a physiotherapist asking for financial support with a research project evaluating equipment for the child with cerebral palsy. The applicant is to be invited to present her project to the National Commitee at the next meeting. A letter from the Mid–Essex Health Authority announced the opening of an adventure playground for handicapped children in April at Moulsham Grange Children's Centre. Further information will be printed in a future newsletter. The Committee's views were sought on the inadvisability of adults and children sharing one gymnasium for out–patient treatments; and also on the legal obligations of a community physiotherapist to provide treatment at home for a child whose parents refused to send their child to a particular school.

The C.S.P. sent the name and address of the secretary of the Paediatric Physiotherapy Interest Group in Southern Ireland and the commitee look forward to making contact, and exchanging newsletters. Another letter had been received from the Association of Orthopaedic Chartered Physiotherapists asking us to define our overlap with them. This has been done and may result in representatives of the two groups meeting up to discuss this further. The committee was also asked for official comments on the Bridgewater treatment regime for children with cerebral palsy. The committee felt that no formal comment could be made on this method of treatment without further knowledge of it.

The Treasurer announced that a profit of £147 had been made during the year ending 1988 instead of the deficit that had been anticipated. This was felt to be largely due to lower National Committee costs during the year. The committee had not held a weekend workshop during 1988 which saved a considerable amount. The income to the Association from courses/conference, sponsorship and donations was reduced in 1988. The Treasurer suggested we give consideration to the purchase of a second computer. The computer already owned is used by the membership secretary and the newsletter editor uses her own computer for the newsletter. It was also agreed by the committee to pay an Honaria to the Membership Secretary now that this is a separate role from the Honorary Secretary.

The Editorial Board have planned topics for the newsletter up to February 1991. It was decided to print more February newsletters because of the increase in demand as new members join early in the year. Excess copies will be sold at Conference.

The 1988/89 validated course finished in January – 22 passed out of 24, 6 with distinctions. The two students that failed part of the course may re–take the part that they failed. The projects were of such high quality that the student's permission for publication in the newsletter is to be sought. It was suggested that the profit made from the course go into a separate account to finance the next validated course.

The committee's attention was brought to an article called "Guidelines of Standard Recording of Central Motor Deficit" published in a recent edition of developmental Medicine. Also, a draft circular from the DHSS EL (88) P 225 on "Assessment and Statementing of Special Educational Needs".

It was reported that the Regional Representatives regularly meet with the PRO before each National Committee meeting and this has resulted in guidelines for Regional Representatives being formulated. Elma Bell was standing down as PRO as her term of office had come to an end and she thanked everybody past and present with whom she had worked. It was with regret that she wrote her last report as PRO and felt she had gained much personal satisfaction working with colleagues on the National Committee. The committee thanked Elma for all her hard work as PRO.

The committee discussed the possibility of advertising physiotherapy paediatric posts in the newsletter again. This is to be further considered and discussed again.

The sub–committee co–ordinating APCP's participation in the World Congress reported back. It was suggested tht the National AGM should be held at the normal time in April of 1991 at a central venue with perhaps a day programme. The Annual APCP Conference would therefore be held later in the year either before or after the World Congress. Suggestions are being considered for the format of our Conference of that year, and also topics for lectures/ workshops.

The sub–committee formulating Good Practice Guidelines in Paediatric Physiotherapy reported that a productive meeting had taken place at the CSP in February with Stuart Skyte and Judy Mead. This had resulted in the Guidelines being substantially tidied up and they are now close to publication. The sub–committee now await the CSP workshop in May for Clinical

Interest Groups who are preparing Good Practice Guidelines and after participating in this hope to submit the Guidelines for publication.

The meeting concluded with discussion on last minute domestic arrangements for the 1989 Conference which started the following day at the University of Surrey in Guildford.

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## Treasurer's report

The Treasurer referred Members to the Balance sheet which shows a Consolidated Account of all the REgional Accounts, the Publications Account and the National Account.

The top Left–hand section of the Accounts looks at Income and shows an overall decrease of £1,846 being £31,981 as opposed to £33,827 in the previous year.

The Income from Courses and Conference was reduced, there was less income from sponsorship, fewer donations and less Interest from B/S Accounts (although this was explained as being because the B/S Account has been changed and Interest is accrued at a different time of the year).

The 1988 Conference made a profit of £2,028 and during the year 4 Regions made contributions totalling £776 to the National Account. They were West Midlands, London, the North East and the South East.

The Expenses shown in the top Right–hand section are similarly decreased, principally less being paid out as Lecture Fees and Accommodation.

It can be seen that Committee Expenses were increased while Administration Expenses were reduced. This is not the National Committee costs, – they, in fact, were reduced by £149 last year, however the Regional Committees costs were increased by £1,089. This is explained by the Regions taking over more of their running costs (e.g. Postage of Newsletters), and increased travel costs also 5 Regions provided some funding for members to attend Courses or Conference.

Obviously higher hidden costs account for a considerable amount; Travel, Postage, Stationary costs were all increased so that the National Committee costs become artificially low. In fact great savings were made on travel and committee meeting costs. No extra meetings were held, there was no Treasurer's Study Day, no Workshop week–end, on some occasions Committee Meeting facilities were free but some costs were increased. Computer services had to be bought because Membership details had to be transferred from the Secretary/s own Computer to the Association's Computer when Jeanne Lamond took over as Membership Secretary. Jeanne had previously used the Computer in her role as Newsletter Editor, and the new Newsletter Editor now uses her own Computer.

To return to the Balance sheet; the surplus of £147 is taken to the bottom Right–hand section where it is added to the Balance brought forward from the previous year and a creditors figure to make a total asset of £20,639 as compared to £20,548 in the previous year.

This asset figure is analysed in the bottom Left–hand section. The Treasurer pointed out that of the cash asset of £18,011 only £11,369 is held in the National Account, the remainder being in the Regions, and the Publications Account.

The Treasurer concluded by saying that last year she was concerned that one year of deficit would lead to another. Fortunately this was not the case. The increase in revenue from Membership fees this year will mean that the Association will not have to rely on goodwill to save money on Committee Meeting Costs and we can look forward to less reliance upon profit from Conference so that hopefully costs wil be kept down for the benefit of all Members who wish to attend.

The Treasurer once again asked members to check whether they are still making a payment

to the Association by Standing Order. Any Standing Orders should be cancelled and overpaid subscriptions resulting from these can be claimed back from the Treasurer.

Finally, the Association's Auditors, G. W. & I. E. Waller, have merged with the firm Neill S. Hill of Warley in the West Midlands.

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## TWO LITTLE POEMS ....

**On the Playground by Mark Roberts-Downing, aged 11.**

Children on the playground are nice to me
- all except one boy, he copies me, tapping his hand.
But I don't care, I have my friends
- Robert, Andrew and Philip. They let me borrow things.
Rubbers, pencils, rulers, felt-tip pens.
They don't mind that I can't run as fast as them,
Jump and hop and catch a ball as well as them
- They wait for me when I am slow and I can forget for a while
That my left side is not as strong as my right.
I like school!

**Exercises by Jamie, aged 9**

I am in the Room
- While Janet is away,
But Mum is in the Room
- So I cannot play.
Then Janet says "Right let's see
- What exercises we are doing today."

*****

## LETTERS TO THE EDITOR

Dear Madam,

I would like to comment on the good article by Eva Bower on distal transfer of the rectus femoris muscle.

At Bristol Royal Hospital for Sick Children, we are carrying out distal transfer of rectus femoris as part of our programme of multiple incremental lengthening in diplegic cerebral palsy.

Our pre-surgical assessment and data collection is as precise as can possibly be without full gait analysis facilities. We carry out a full clinical assessment, video and work out the Performance Cost Indicator to give us some idea of energy expenditure.

To date we have operated on four diplegias with severe crouch gait - three independent walkers in danger of becoming wheelchair dependent due to increasing contracture, increasing energy expenditure and painful knees. The fourth was a non-functional walker who wanted to retain the ability to be independent for transfers and assisted walking of short distances. Age range was 11 to 15 years.

Distal rectus transfer to sartorius will produce neutral rotation, to the lateral intermuscular septum will reduce dynamic external rotation, to gracilis to reduce dynamic internal rotation.

Six weeks of intense in-patient physiotherapy is required post operatively for multiple

incremental lengthening - also a comprehensive hand over to the referring centre for on going management.

We hope to publish case results/studies once we have data on twelve cases - early indications are encouraging. The first case - a fourteen year old independent walker is now eighteen months post operation, has increased his distance walking and is pain free with improved gait pattern.

We entirely agree with the philosophy of careful selection, appropriate timing of surgery and a combined team involvement of Orthopaedic Surgeon. Physiotherapists and Orthortist.

J.C. Pyman, Supt. Physiotherapist,
Bristol Royal Hospital for Sick Children.

Dear Madam

I would like to comment on the article written by Fran Shipman in the May newsletter on 'Keilder'.

Physiotherapy and teaching staff of Pendower Hall Special School have been taking children away to the Keilder Adventure Centre since it opened in 1981.

I must reinforce what Ms. Shipman says of the value of a stay at the centre. The activities on offer are varied and wide ranging, thus meeting every possible need.

Having worked now with disabled children for almost five years (a relatively short Paediatric career compared to some readers!) I am of the first belief that, although hands on Physiotherapy, bracing, hydrotherapy and exercise regimes all have their place in the management of these youngsters, the value of a venture such as an activity holiday to a location such as Keilder is greatly underestimated as far as therapeutic value goes.

The outdoor pursuits offer experiential participation on the part of the disabled youngster and thus broaden and enhance the quality and enjoyment of life.

I have seen children that I have believed to have been quiet and reserved whilst in school develop over a period of as little as one week into strong characters full of determination and courage.

The fact that the children are enjoying the activities that they are doing means that they forget the amount of exercise they are carrying out and strength and endurance build up. We are thus achieving one of our Physiotherapy aims in a far more exciting way than in the mundane surroundings of school where we strive week in week out to make exercise interesting and attractive.

Independence work and mobility in wheelchairs or on walking aids can be carried out as part of the normal daily running of the week. This is where you really find out how the children cope with daily living activities, toiletting and self care skills. You are however in a situation where you have the time to devote to these matters and make a concentrated effort to overcome problems by the end of the holiday.

I personally have found that the more we take our children away the better they become at coping in strange and difficult situations and non-adapted environments. After all, in a school situation where all the facilities are geared towards the disabled person, training for the 'real' world is totally unrealistic!

I agree with Ms. Shipman when she says that youngsters can be filled with trepidation before setting out on a venture such as this but once they have been away, from my experience, they are eagerly awaiting the next trip hoping that they will be selected to go again!

Julia Leslie (Ms)
Senior Physiotherapist
Pendower Hall Special School
Newcastle Upon Tyne

# BOOKS AND PUBLICATIONS

## Books

### Cystic Fibrosis: A guide for parents and sufferers

Percy Bray Pp 177
Souvenir Press/Human Horizons £13 incl. p & P

### I have Cerebral Palsy and I have Cystic Fibrosis

Both published by Franklin Watts, One World Series. £5.95 each
Aimed at children aged 8 years upwards.
Available from all good book shops.

### The DLF Thesaurus

Published by Disabled Living Foundation
Format: A4, approx. 150 pages ISBN: 0 901908 51 7
Publication date: January 1989 Price: £28.50
The first major thesaurus on daily living equipment for people with disabilities, with over 6,000 entries.
Has been developed as part of the DLF Database.
DLF, 380/384 Harrow Rd., London W9 2HU. Tel: 01 289 6111

### Parents, Professionals and Mentally Handicapped People

Helen McConachie 1986 £20
ISBN 0–7099–4808–2
The author develops a coherent framework for the involvement of parents in teaching their young handicapped children.

## Publications

The Tuberous Sclerosis Association have a comprehensive list of Fact Sheets which aim to assist parents and professions to understand more about TS. Subjects covered include: Epilepsy; Education and Mental Health Legistation; Sleep Problems; The 1981 Education Act; Children with Autism – Teaching Basic Life Skills; Music Therapy.

Also available from this group is a Video Tape on VHS, Betamax and U–matic, lasting 25 minutes, and illustrating TS through four children, discussed by their parents. It is suitable for a wider audience who wish to know about this increasingly recognised condition.

An illustrated brochure on TS has been written for health professional by Dr. John Wilson, Consultant Neurologist at Great Ormond Street, London. There is also a more general leaflet available for the public. For information on Tuberous Sclerosis, contact Mrs. Janet Medcalf, Secretary TSA (GB), Little Barnsley Farm, Catshill, Bromsgrove, Worc., B61 0NQ. Tel: 0527 71898

**The Muscular Dystrophy Group of Great Britain and Northern Ireland** have produced a series of leaflets entitled 'The Parents' Guide to Physical Management of Duchenne Muscular Duystrophy, by Sylvia A. Hyde, MCSP, Supt. Physiotherapist at Hammersmith Hospital, London.

Also available from the MDG –

'Hey, I'm here too!', a guide for brothers and sisters of children with Muscular Dystrophy;

Carrier Detection and Prenatal Diagnosis of Inherited Dystrophies;

'Everybody's different, nobody's perfect'

Weight control in patients with Muscular Dystrophy

All published by: Muscular Dystrophy Group of Great Britain & N. Ireland, Nattrass House, 35 Macaulay Road, London SW4 0QP. Tel: 01 720 8095.

**Sport and Recreation for the Disabled:** an annotated select bibliography of literature, available from the Information Centre, Sports Council 16 Upper Woburn Place, London WC1H 0QP.

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## HAVE YOU HEARD . . .

* **Chailey Heritage Adjustable Seating Height Assessment Boxes**

These boxes made of top quality ply and adjustable in 1" steps from 2" to 20", accommodate many different thigh lengths and bottom widths.

Some of the uses of these versatile boxes are:

1. Assessment of correct seating height.
2. Therapy involving seating height and balance.
3. Practising negotiating stairs. Can be arranged into gradual rise or pairs or even single such as a curb.
4. Temporary foot blocks under high chairs. (To assess ht. of block).
5. Inverted for play sessions they become cars, boats or spacecraft.

Who could use these boxes:

Community Physiotherapists, to carry all the other equipment.

Physiotherapty Dept. – to form several seats for small groups.

Mobile Seating Assessment Clinics – easy to transport, immediate adjustments.

Paediatric assessment Units – quick seating height assessments.

Therapists in schools – One piece performs several functions.

Price: £150, available from M.H. Fourie, Gower House, Albert Rd., Ripley, Derby,. DE5 3FZ.

* Quality Circles are to the fore in Lincolnshire Health Authority. By producing an assessment form which applies various criteria, it is possible to supply documentary evidence of how priorities are reach in relation to physiotherapy management of patients. For further details, contact Jill Butson, Queen's Park School, South Park, Lincoln.

* Trish Mitchinson, who has worked for Ortho–Kinetics and Joncare over the last ten years sends her thanks to the many physiotherapists who so patiently and kindly supported her during that time.

Trish retired from work at the end of May, and we wish her well.

* Extract from Minutes of AGM in April 1980:–

"The year had been one of great activity but also one of frustration and concern, in particular owing to financial difficulties in the N.H.S. and Local Authorities which had prevented members from attending Courses with backing. It was to the great credit of Regional Reps. that their courses had been so interesting that many members had paid their own fees to attend."

Does anything change?

* **Musical Matters**

A tip for helping young children who may be upset by their vaccination injections is to give them some headphones and distract their attention with some catchy or soothing music.

The Royal Liverpool Philharmonic Orchestra has been helping infant and junior children at

special schools on Merseyside by creating a programme in which the children produce a story, using an endless variety of rhythm sounds from the percussion section of the Orchestra.

In time, they produce sketches and paintings which, following the final concert, will be on display for parents and friends.

* The Kielder Adventure Centre, about which you will have read in our May issue, is at Low Cranecleugh, Kielder Water, Falsone, Hexham, Northumberland. Tel: 0660 50232. Keilder offers a wide range of outdoor activities for disabled people and their families. It is open all year.

* The Outward Bound Trust – Chestnut Field, Regent Place, Rugby CV21 2PJ. Tel: 0788 60423/4/5, are now running courses for the ambulant disabled.

* The Youth Hostel Association (England and Wales) – Trevelyn House, 8 St. Stephen's Hill, St. Albans, Herts AL1 2DY, now have some adapted hostels for disabled people in South Wales, and welcome small groups of disabled youngsters in many of their hostels. Ask for an information sheet.

* Everaids - 38 Clifton Road, Cambridge, CB1 4ZT. Tel: 0223 243336, have a regular newsletter called Turbo News which they send to families with the Turbo wheelchairs. Ask for a copy if you wish to keep up to date on their current activities.

* Your editor sends our Newsletter to a group in Malaysia and in return receives their newsletter entitled 'Partners'. This is a Christian group called 'Maylasian CARE', and a recent issue of 'Partners' addressed the issue of 'Community Based Rehabilitation' which is "a concept of care which is gaining support throughout the country and promises to be a major means of reaching out to disabled people and their families, many of whom are receiving only very limited help at present". Malaysian CARE were asking for a physiotherapist in that edition.

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# STUDY DAYS/COURSES

### The use of Fixed Ankle–Foot Orthoses and Introduction to the Gait Laboratory

Date: August 10th, 10.00 – 4.30
Tutors: Mrs. Penny Butler MSc MCSP
Mr. R. Major B.Sc.,Cert.Ed.
Fee: £10 APCP Members. £15 Non–Members. Lunch not provided. Bring your own.
Venue: Robert Jones & Agnes Hunt Orthopaedic Hospital, Oswestry.
Application with payment to Mrs. Julie Wilding MCSP, Sr. Physiotherapist, The Children's Centre, University Hospital, Heath Park, Cardiff CF4 4XW.

### Seminar in Paediatrics/Mental Handicap

Date: 27th – 29th September 1989
Tutors: Gunnar Birath from the National Centre for Motor & Mentally Handicapped people in Sweden
Phoebe Caldwell, Educationalist and designer for profoundly and severely mentally handicapped people.
Fee: £42
Further details: Gay Hall, Head O.T., Willows Child Development Centre, Pedders Lane, Ashton, Preston, Lands PR2 2TR.

### Gait Analysis and Elements of Orthotic Management

Date: 7th October at Princess Margaret Rose Orthopaedic Hospital, Edinburgh

Tutors: Dr. Barry Meadows on Gait Analysis and A.F.O./s for C.P. children
Liz Hazelwood, Sr. Physio, on Below Knee Serial and Inhibitory Plastering
Joyce Cummings – Sr. Physio & Alan Doig, Orthotist, on Spinal Jackets
Fee: £15 APCP Members
£20 Non Members – includes lunch, coffee and tea
Further details: Miss Lyn Campbell, Westerlea School, 11 Ellersly Road, Edinburgh EH10 6HY
Closing Date: 22nd September 1989

**Perception – A Hidden Handicap?**

Date: 11th – 13th October 1989 Course No. 25/112
Tutor: Pat Kennedy, Head Occupational Therapist
Fee: Tuition £83. Residence £57. Non–Residence £30
Further details: Castle Priory College, Thames St., Wallingford, Oxfordshire OX10 0HE. Tel: 0491 37551

**Special programme inspired by work in Hungary – Information Day**

Date: 17th October. Course No. 25/118
Tutors: From Rutland House School, led by their Headmistress, Carol Oviatt–Ham
Fee: £22 inclusive of coffee, lunch and tea on departure.
Further details: Castle Priory College, Thames St., Wallingford, Oxfordshire OX10 0HE. Tel: 0491 37551

**Basic Paediatrics**

Date: October 18 – 20th 1989, in London E2.
Fee: £25 per day, or £60 for full three days.
Further details: Physiotherapy Dept., Queen Elizabeth Hospital for Children, Hackney Rd., London E2 8PS. Tel: 01 739 8422, Ext 95 or bleep 52 & 53.
A three day course to cover Basic Paediatrics. The days shall be split into Wednesday, Respiratory, Thursday, Orthopaedic and Friday, Neuro–developmental. Application form from address above. Please send S.A.E., but do not send fee.

**The Hand as a Guide to Learning**

Date: 27th – 29th October 1989. Course No. 25/128
Course organisers – Ester Cotton and Maureen Lilley
Fee: Tuition: £83. Residence: £57, Non–Residence £30.
Further Details: Castle Priory College, Thames Street, Wallingford, Oxfordshire OX10 0HE. Tel: 0491 37551.
This course is specially designed for those working with young and more intellectually able children who have cerebral palsy or a similar disability.

**The Portage Teaching Materials**

Date: 13th – 15th December 1989. Course No. 25/160
Tutors: National Portage Association Tutors
Fees: Tuition £98. Residence £57. Non–Residence £30.
Further Details: Castle Priory College, Thames Street, Wallingford, Oxfordshire OX10 0HE. Tel: 0491 37551.

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# REGIONAL PROFILES

## TRENT

Trent Region stretches from Barnsley, Doncaster, Rotherham and Sheffield to the north, Leicester to the south, Grantham and Newark to the east, Derby to the west. Chesterfield and Mansfield are somewhat to the north west, whilst Nottingham is almost in the centre. There are three major teaching hospitals which act as centres of expertise and excellence for a wide range of conditions.

The area has a wide variety of scenery from heavy industrial areas with large parks where wildlife and animals outnumber the people. There are many cultures and nationalities mingling with the local dialects of the five counties, making the region a rich and interesting patchwork.

We have 75 members including some occupational therapists and one honorary member – Miss Rose Dawson. These therapists work in hospitals, assessment units, in the community and in special schools. Covering the five counties, the emphasis on intergrating P.H. children into normal schools varies according to the local education policy. The advent of the National Curriculum may add to the therapists' difficulties, especially where there are staff shortages but may make parents more aware of our advisory management role rather than expecting or relying on our 'hands on' techniques.

The committee has representatives from each of the areas and meets regularly in Nottingham where we also hold our A.G.M. Those members to the extreme north and south of the region travel some considerable distance to attend. Jenny French (Chesterfield area) has been elected to the National Committee and pursues her interest and our education in Sensory Intergration. Noreen Hare helps to steer us with zest and enthusiasm as we organise the conference for 1990 in Loughborough.

Study days are held 2 – 3 times per year throughout the region, giving therapists working in isolation a chance to meet up with colleagues and exchange ideas. Some Study Days have been over subscribed whilst others are relevant to only a limited audience. We hope to have something for everyone at some stage and encourage members to voice their requirements.

Recently, local Leicester members were mentioned on the news media with their concern about 'baby walkers', whilst a Lincoln member had a write–up in Therapy with her interesting data on caseload priorities for paediatric physiotherapy services.

Having had our 5th A.G.M. in March as Trent A.P.C.P., we hope that this association will continue to increase in size with dedicated and enthusiastic members. Thanks to those who so loyally support our efforts and we extend a hearty welcome to those whom we do not see so often.

Margaret Meagher

## N. IRELAND

Our region covers the whole of N. Ireland comprising of six counties, an area of 5,240 sq. miles with a population of 1.25 million. There are approximately 90 physiotherapists working in various fields within paediatrics.

Our specific interest group was reformed four years ago as we felt the need for communication between physiotherapists throughout the province. It was decided to meet bi–monthly and hold an Autumn study day and a week–end course each Spring:–

Lectures have included: – Cystic Fibrosis, C.D.H., Child Abuse, Reyes Syndrome, Conductive Education, Behaviour Modification, surgery in the CP Child

Study Days have been held on: – The development of play
– Update of the Neonate
– Spina Bifida

The weekend courses have mainly comprised of the introduction to the Bobath Approach or problem solving with Colin Stevens from the Bobath Centre. This year we held our course on Counselling. Our activities are well attended and there is real enthusiasm within paediatrics. Two years ago it was decided that we should become affiliated to A.P.C.P. Nationally, as a result, we have felt the benefit of wider communication within our profession.

Recently we have become more aware of the lack of facilities, poor staffing/child ratios, and the lack of post–graduate training for physiotherapists working in paediatrics and it was decided to highlight these points to the minister of health in N. Ireland, Mr. Richard Needham M.P. As a result of meeting with him, we are undertaking a survey to collect relevant information from physiotherapists province wide. Another meeting with the minister is planned for September and it is hoped that with our collated information that we will be able to plead our case towards the appropriate needs.

Over the past four years we have felt that our group has helped to stimulate greater interest within paediatrics and bring together physiotherapists with a common interest.

Jenny Saunders

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## REGIONAL REPORTS

**E. Anglia** **Reg. Rep. Mrs. Lyn Weekes, 37 The Cedars, Milton Road, Harpenden, Herts AL5 5LO.**

By the time you read this, Lorraine Burr will once again have run a workshop for us on 'The Clumsy Child' at Basildon General Hospital, Basildon, Essex on 8th July.

Our next study day is on 22nd September, at Mount Vernon Hospital, programme as follows:

Hand Burns in Children – Mr. B. Morgan, Consultant Plastic Surgeon.
Congenital Hand Deformities – Mr. P. Smith, Consultant Plastic Surgeon.
Physiotherapy following hand Burns – Heather Taylor, Sr. Physiotherapist, Burns and Plastic Surgery Unit.
Flexor Tendon Injuries – Susan Beadman, Supt. Physio.
Splinting – Annette Leveridge – Head O.T.
All speakers are from Mount Vernon Hospital.

Application Forms are enclosed with this news letter.

One of the benefits of attending Study Days is the exchange of ideas and experiences with colleagues. We are considering organising a day when East Anglians exchange their knowledge. Do you have some special expertise that you could share with the rest of us? It might be some special technique you have developed or perhaps some way of organising your work load that we all need to know about! Please let one of the committee members know if you are interested in attending this type of meeting.

**London** **Reg. Rep. Karen Burchett, Squirrel's Leap, 6 Willersley Avenue, Orpington, Kent BR6 9RS.**

With renewed energy and refreshed after organising the National Conference in April this year, we are now busy preparing future events.

The next one will be on Sat. 23rd Sept. at the Wolfson School of Nursing, Westminster Children's Hospital, and is entitled 'Neonates – from Hospital to

Home'. The organiser is Anne Zawada, 8 Canbury Mews, Sydenham Hill, London SE26 6TJ. Tel: 01 693 9520. Full details are in the August Physiotherapy Journal.

**W. Midlands** **Reg. Rep. Mrs. Carol Foster, 90 Greenhill Road, Birmingham B13 9SU.**

The new committee for the W. Midland's Region have produced a varied programme of bi monthly meetings for 1989/90 and hope that it offers something of interest to many of its members.

Beginning in July with an evening given by Gordon McQuilton on 'Seating', notified in the Newsletter, leading to an evening on the 'White Paper' in September at the Children's Hospital and finishing 1989 with a 'Down's Syndrome Day' on 4th November, also at the Children's Hospital. To lead us into the New Year, on 20th January a 'Respiratory Day' – a basic introduction in respiratory care at Dudley Road Hospital and concluding in March with a day on 'Gait Analysis'. Further details will be circulated to all members.

We all look forward to a stimulating and interesting year and hope that we shall meet some new faces and re–new some old acquaintances and that we shall see many of our Regional Members at these forthcoming events.

**S. East Reg.** **Rep. Miss Terri Fearn, 38 Woodlands Close, Peacehaven, E. Sussex BN10 7SF.**

Our April Study Day on 'The Motor Impaired Child' was very well attended and the lectures were very stimulating.

We have been pleased to see one of our S. E. Members – Rosslyn Gill – appear on T.V. recently on a programme about a child with Reye's Syndrome – it was a very good presentation.

The next study day is entitled 'The Pre–Term Baby – Respiratory Care and Developmental Screening' Lecturers are Annette Parker and Viv Williams. The date is Sat. 7th October 1989 at the Postgrad. Medical Centre, Brighton General Hospital.

Applications from – Ruth Cartwright, 32 Midfields Drive, Burgess Hill, W. Sussex, RH15 8EN.

**S. West** **Reg. Rep. Miss G. Riley, Meadows, Bowerchalke, Salisbury, Wilts SP5 5DB**

Plans are now complete for the study day to be held at Odstock Hospital, Salisbury on Nov. 11th 1989 entitled 'Juvenile Arthritic conditions'

This day will provide updating for physiotherapists working in the community and in District General Hospitals

Speakers include two paediatricians, one of whom specialises in these conditions, Mrs. Bobby Jarvis MCSP and Sheila Lawton MBAOT from Wexham Park Hospital. Emphasis will be made on recent advances and how best these children can be managed within a busy general paediatric environment.

Applications should be made:– Miss G. Riley MCSP Children's Unit, Odstock Hospital, Salisbury, SP2 8BJ.

Price: £12 for APCP members £15 for non APCP members. Lunch included.

There are local study days being run in the Autumn which will be publicised in the regional Newsletter.

**N. Ireland**

**Reg. Rep. Mrs. Jenny Saunders, 149 Queensway, Co. Antrim BP27 4QS.**

Our Spring course on Counselling was most interesting and thought provoking, but, numbers were small. However, this allowed opportunity for small groups to discuss various aspects of the subject. A follow–up to this is proposed. The new committee has taken office and are working on the programme for September and an Autumn Study Day is planned for 21st October 1989 on the subject of Head Injuries. Our first meeting will be held on Monday 18th September at 7.30 in Fleming Fulton School. Dr. Gilliam Rankin will speak on 'Statementing Procedures'.

**Wales**

**Reg. Rep. Lyn Horrocks, 9 Garth Close, Redry, Nr. Caephilly, Mid Glamorgfan CF8 3EN**

The next meeting of the Welsh region is on 10th August – see 'Study Days/ Courses'. This is a unique opportunity for teaching and discussion on the use of A.F.O./s with the advantage of the facilities of the gait laboratory. Everybody welcome – please invite your orthotists and also colleagues working with adults.

**N. East**

**Reg. Rep. Judith Baigent, 16 Valley Bridge Parade, Scarborough, N. Yorks YO11 2PF**

We had a very enjoyable evening meeting on May 8th when Lindsay Hardy – O.T. from the Endeavour School, Middlesbrough, spoke to us about her impressions of Hungary and the Peto Institute following a six–week visit there.

We have a day course organised for September 30th at York with Jabadao, a group who work with dance and movement for the handicapped. Further details will be circulated to all members closer to the time.

We are hoping to have an evening meeting on Hand Skills with Dorothy Penso, O.T. at the York Child Development Centre, but have not finalised a date yet.

**Scotland**

**Reg. Rep. Anne Harnden, 56 Huntly Court, Langside, Glasgow G41 3DH.**

A very interesting and informative Study Day on the Bobath Approach to the treatment of children with Cerebral Palsy was held on June 4th at R.H.S.C. Yorkhill. The tutor was Gill Stern from the Bobath Centre, and the day was fully subscribed. An excellent lunch provided and background for continued stimulating discussion.

A future Study Day has been planned for October, on aspects of orthotic management and this also promises to be very interesting.

On the continuing subject of Conductive Education, the committee has written twice to Michael Forsyth, Minister for Scottish Health and Education, expressing members' frustration at the lack of funding and resources in Scotland, at a time when the government proposes to send a large sum of money to Hungary. We have, at last, received a reply stating that, although he appreciates the excellent work done by Scottish therapists, he feels it is an education matter. We will continue to correspond with him, and would welcome any comments and news for A.P.C.P. members.

**Trent**

**Reg. Rep. M. Meagher, 9 Oak Road, Thurlston, Derbyshire DE7 3EW.**

The preliminary Course on Sensory Integration was held in April and a more advanced course is to follow on 6th – 8th September. Details from Mrs. Oldfield, P.A.C., The Health Centre, Saltergate, Chesterfield S40 1SX.

The day on Visual Handicap in June went well although the numbers attending were small. However, the mix of the different disciplines and the enthusiastic speakers made it a very worthwhile day.
Future plans are afoot for a day on J.C.A. in October or November in Retford. Details later.

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# VACANCIES

## BRIGHTON HEALTH AUTHORITY
## DISTRICT PHYSIOTHERAPY SERVICE

### PAEDIATRIC SERVICE

### SUPERINTENDENT III PHYSIOTHERAPIST
### CHAILEY HERITAGE

This well known centre invites applications from senior physiotherapists with proven experience in the management of handicapped children.

Chailey Heritage is a hospital and school with a rehabilitation engineering unit for children with neurological and orthopaedic conditions. There is an out–patient and community service.

Advice and support are provided for out of district referrals.

There are close links with staff at the Royal Alexandra Childrens Hospital forming a co–ordinated paediatric service with district support.

The appointment would be effective from September 1989.

A warm welcome will be extended to those wishing to make an informal visit. To arrange this or for further information contact:

Miss Ruth Cartwright, Superindendent Physiotherapist, Chailey Heritage Hospital, North Chailey, Nr. Lewes, BN8 4EF. Tel: Newick 2112.

### SENIOR I PHYSIOTHERAPIST
### ROYAL ALEXANDRA CHILDREN'S HOSPITAL

This post requires a commitment to work flexibly within the paediatric service which encompasses hospital, schools, nurseries and includes a close liaison with the child assessment centre and Chailey heritage.

We are looking for a team spirited physiotherapist with good communication and organisational skills who enjoys all aspects of paediatric care.

Opportunities to extend clinical and managerial skills are an integral part of the service.

For further information or to arrange an informal visit contact:

Miss Christine Young, Superintendent Physiotherapist, Royal Alexandra Children's Hospital, Dyke Road, Brighton, BN1 3JN. Tel: 28145.

Students are on placement from Guy's Hospital and a new school of physiotherapy is planned to open at Brighton Polytechnic in September 1990.