

The Treatment of Neurologically Impaired Children Using Patterning Movement Therapy

The submission by the AAP, that, "treatment programmes that offer patterning remain unfounded" needs to be considered thus; the basis of today's physical therapy movement programmes, is built entirely on the premise, that movement by a therapist, of any part of the human anatomy, on a regular daily basis is in effect "patterning". This movement therapy, practised daily by fully trained, qualified, physiotherapy, and occupational therapists, to rehabilitate stroke victims is accepted worldwide in private, and state medical regimes. The team originally put together by Fay was done so to rehabilitate stroke victims and recipients of traumatic brain injury through accidents. In effect the AAP critique undermines today's physio and occupational therapy practitioners those practitioners that the AAP refers to in their web site, www.medicalhomeinfo.org/health/Downloads/EIBrochureF.pdf. to which autistic children should be referred to for therapy as the basis for Early Intervention.

The original critique of the AAP in 1968 which led Neman et al, in their paper "Experimental Evaluation of Sensorimotor Patterning used with Mentally Retarded Children", published in American Journal of Mental Deficiency 1974, Vol 79, No.4,372-384, to quote "The rapid rise to prominence of the Doman-Delacato regimes, the zeal of their followers, and the stories appearing in the popular press telling of remarkable 'cures' all served to bring the wrath of the 'establishment' to bear upon the Institutes for the Achievement of Human Potential and its methods", was only published 15 years after the establishment of the organisation.

In her presentation "Restoring Neurological Function" Professor Janet Eyre, discussing the use of physical therapies to restore movement, rightly acknowledges the fact that "systematic reviews of the evidence have so far failed to demonstrate that any one physical therapy approach is more effective than any other. Or have they yielded any insights as to which of the many interventions available are suitable for which patients, and at what stage in the recovery process and in what dose." Professor Eyre goes on to say "Part of the problem is that many of those therapies are based on uncontrolled clinical observations of their effects. That does not mean they should be discarded."

The paper published in Annals of Neurology, 42,283-291 in March 2004 for the Academy of Medical Sciences, overviews the rationale of neurological reorganisation on the basis that "Targeted physical therapies have been shown to promote recovery following brain injury by stimulating reorganisation and beneficial plastic changes". Professor Eyre whose specialty is paediatric neuroscience has previously discussed the plasticity of the brain goes on to say in her presentation "that there is plenty of evidence that conventional physical therapies work for the rehabilitation of stroke patients. For instance, repetitive shoulder movements performed soon after the stroke improves the function of the arms".

The presentation in its entirety can be viewed via www.acmedsci.ac.uk/images/publication/pneurofu/pdf in which on page 56 in paragraph L4 she contemplates that "As scientific knowledge about the mechanisms of recovery grows, it reveals broad principals on which new therapies should be based. For instance, somatosensory or touch feedback from normal activity or repetitive exercises is now known to be an important driver to recovery". The final paragraph concludes "Musculoskeletal consequences of neurological injury are reversible and amenable to rehabilitation. Nutrition and metabolism should also be considered in any package of holistic rehabilitation."

Professor Eyre, in this conclusion, echoes the sentiments of Patricia Kane Ph.D. in her work "Review of the Neurochemistry and Neurophysics of Autistic Spectrum Disorder", by saying "Children within the realm of autistic spectrum disorder exhibit presentation that has forced us to look deeper, to embrace the whole person, the brain, the nervous system, the gastrointestinal system, the immune system, the endocrine system the hepatic system, the musculoskeletal system, the renal system."

The basis of a movement therapy programme, Sensory Integration Therapy for Neurological Rehabilitation being used in school environments dedicated to the education of special needs children has been established within the Westminster Governments' Department for Education and Skills.

In their document "*Planning, teaching and assessing the curriculum for pupils -with learning difficulties*", accessible via www.nc.uk.net/ld/index.html they offer the following guidance; Physical education; Opportunities at Key Stage 1

Much of the programme of study at Key Stage 1 is relevant to pupils with learning difficulties. With modification, it can provide stimulating and challenging learning opportunities. All pupils can contribute in group work with others at their own level of ability.

The document suggests pupils explore basic body movements and actions using different parts of men-bodies. To acquire and develop skills, suggesting, crawling, sliding, rolling, moving backwards and forwards. To select and apply skills, tactics and compositional ideas, be helped to follow and respond to

simple instructions for example stop and start.

At Key stage 2, the document suggests listening and responding to action words, for example, walking, marching on the spot. Suggesting, as part of games activities, ball games, catching, throwing, on the floor foot skills of passing, dribbling. Throwing and catching bean bags, all as part of hand eye coordination programme, to develop binocular vision.

The Welsh Assembly Government, in their recently published guidance document "*Routes for learning*", Crown copyright 2006, reference AC/GM/0612, April 2006, affirms that, "This guidance document, written to support the use of the Routes for Learning materials, offers an overview of the main theories and background information, underpinning the effective teaching and assessment of learners with profound, and Multiple Learning Difficulties". In the Additional Guidance section, the document suggests that therapies, including movement therapy, and occupational therapy to address sensory impairment, could be included in the curriculum design. The rationale for this is explained in the premise that inhibiting factors in the student's ability to learn is irrefutably connected to sensory impairments exhibited by students with learning delay. The document outlines the reasons for the sensory impairments linked to retained inhibitive reflexes. Addressing these inhibitive reflexes being the key to improved learning ability.

It is essential to recognise that the physical exercise components of the DIES document, and movement therapy in the Welsh Document are the core elements of Delacato Therapy, evolved from the ideas of neurologist Dr Temple Fay and propounded in his paper *The Origin of Human Movement*, presented to the Fourth Annual Institute in Psychiatry and Neurology April 1954 and published in Amer. J. Psychiatry 111:644-652,1955.

In the published work "*Using a developmental movement programme to enhance academic skills in grade 1 learners*" Fredericks, Kokot, Krog, Teacher Education, University of South Africa, Pretoria, Republic of South Africa, describe the outcomes of a rigorous experimental programme to associate the benefits of physical exercise movement to cognitive learning and academic skills and investigate the efficacy of a movement programme on the academic skills of early learners

In their opinion " The results of the pre-testing and post-testing indicate that the learners of the experimental group showed a significant improvement in spatial development as well as in reading and mathematical skills, compared to the learners in the control group, free-play group and educational toys group".

In support of the rationale behind their experimental programme, the authors cite Summerford, C. (2001).

What is the impact of exercise on brain function for academic learning? Teaching Elementary Physical Education, 12(3): 6-8." that physical education is often seen as a frill, and has been discontinued in many South African schools, which might be a misguided kind of thinking"

The authors, drawing on the works of Kephart, (1975). *The slow learner in the classroom*. Columbus, OH: Merrill, Ayres, (1979). *Sensory integration and the child*. Los Angeles, CA: Western Psychological Services. Delacato, (1959). *The treatment and prevention of reading problems*. Springfield, IL: Charles C. Thomas.. (1974). *The ultimate stranger, the autistic child*. Novato, CA: Academic Therapy, and the recent works, brain research of Pica, (1998). *Movement and the brain: moving and learning in early childhood*. Teaching Elementary Physical Education, 9(6): 18-19, De Jager, (2001). *Breingim*. Kaapstad: Human & Rousseau, and others suggest, "in effect, that the body, as a sensory-motor response system, causes the brain to learn and thus to organise itself".

The premise that movement (physical education programmes) is the sole mechanism for effective remedial action has to be viewed with caution. Feigley, (1990), *Should schools eliminate mandating physical education classes?* School Administrator, 47(2): 15, 17,20,proposes that physical education programmes need to more than mere physical fitness regimes. Likewise according Fredericks et al, Corrie and Barratt-Pugh, (1997). *Perceptual-motor programs do not facilitate development: why not play?* Australian Journal of Early Childhood, 22(1): 30-36, report on studies showing that certain perceptual motor training was not an effective intervention technique for academic cognitive or perceptual-motor variables. The results show little effect in any developmental domain, even on children's gross motor skills. Furthermore, the programmes made little difference to the reading, arithmetic, language or spelling of children with learning difficulties or of normally developing children. However, even though it may initially seem that Corrie and Barratt-Pugh do not accept the theory that movement leads to learning, they do state that it is not the importance of perceptual-motor development that is disputed, but the way of supporting and facilitating that development that is critical.

According to the authors Fredericks et, al a sensori-motor movement programme should be aimed at the root cause of learning difficulties. On the basis that vestibular, proprioceptive, tactile visual and or auditory systems are dysfunctional, the child will fail in its attempts at academic work. Kokot,SJ. (2003a). *Diagnosing and treating learning disabilities in gifted children: a neurodevelopmental perspective*. Gifted Education International 17(1): 42-54. The complete document can be viewed at www.ilt.co.za/articles3.html.

In May 2006 the American Academy of Pediatrics republished its Policy statement originally published in its journal Pediatrics Vol. 104 no.5 November 1999, pp.1149-1151, <http://aappolicy.aappublications.org/cgi/content/full/pediatrics;104/5/1149>.

This in turn was a reiteration of the original statement of 1968 and 1982. The May 2006 statement affirms

that "Current information does not support the claims of proponents that this treatment is efficacious, and its use continues to be unwarranted". However nowhere in the References appendage is cited any peer reviewed, journal published work after 1999 which refers to the above mentioned subject matter, to which the article refers, either in support of the argument of the subject matter, or against the subject matter.

Another failure of the AAP, which, is considered to be necessary in balanced scientific commentary, is to ensure that the content of the argumentative discourse at the time of publication contains references to the latest published information from authors of the discussion material pertaining to the subject matter.

To this point, the omission of references to published works of Delacato in 1970, and 1974, "A new start for the child with reading problems" and "The ultimate stranger the autistic child" is to be questioned, as patterning, as defined by the AAP is not referred to in either book.

If the uncommitted reader is to draw a judgement from the argument by the presenters then the reader has to have been given the opportunity to consider a balanced view of the critique.

The reader would then have discovered that the so-called Doman -Delacato therapy was first proposed by Dr Temple Fay MD a neurosurgeon working in Philadelphia, who incidentally, was responsible for the introduction of brain cooling protocol prior to neurosurgery, whose original operational cooling equipment was exhibited at the Smithsonian.

Fay's paper "The origin of Human Movement" was published in AmerJ. Psychiatry 111: 644-652, 1955.

Further more the uninformed reader would have discovered that Delacato and Doman had gone their separate ways by 1972 and Delacato continued his work to develop a new therapy which relied less heavily on the "patterning" concept first laid down by Fay.

The submission by the authors for a need for several persons to perform exercises to the head and extremities for several hours a day, no longer applies to today's Delacato Therapy, except on individuals with no movement ability, and then only for very short periods.

The omission of these pertinent points by the AAP, is a serious misjudgment by the AAP to construct a valid balanced argument, necessary to have credence in the cause of scientific discourse, which makes their published critique appear to be more of personal issue, rather than a scientific one. This can be argued due to the fact that other individuals were working on the same principles around the same period as the Doman's and Delacato, Kephart (1975), Cratty (1972,1973) and only the Doman-Delacato work is primarily referred to in text and References.

In 1970, Carl Delacato (17) proposed a new revolutionary concept together with a new curative therapy, outlined in his book, "A New Start for the Child with Reading Problems".

In his book Delacato describes his work as being hard in as much as it presented a new approach to reading problems; reading problems were the result of lack of development of the nervous system, especially in the development of complete one-sidedness.

Delacato notes that the previous book relating reading to brain function was written in 1923 by Dr Samuel Orton, and now he was to resurrect and add fuel to that old fire in educational circles. Dr Orton, a clinician and prominent dyslexia researcher, hypothesised that normally developing readers suppress the visual images reported by the right hemisphere of the brain because these images could potentially interfere with input from the left.

Using functional magnetic resonance imaging to study brain activity in children, researchers led by Dr Guinevere Eden (18) at Georgetown University Medical Center confirmed part of an eighty year old theory on the neurobiological basis of reading disability, and shed new light on brain regions that change as children become accomplished readers. Advanced technology allowed the researchers to discover that children do in fact turn off the right side of their visual parts of the brain, as they become accomplished readers. This confirms an aspect of Orton's work - borne out of observations of individuals with reading disability - is correct.

To put this theory into its simplest terms, systems of reading and language difficulty, show up where there is conflict between one side of the brain and the other to gain language dominance.

In the human brain the language area is usually located in either, the left, or right side of the brain.

Likewise, man is usually left- handed or right- handed.

Normally, dominance in the brain begins as soon as baby learns to speak, total dominance achieved around 7 to 8 years of age. Theoretically, a missing of any stage of development between crawling, creeping, walking, seeing, talking and writing creates problems in reading.

In November 2003 researchers led by Dr Mark Wallace (19), report that Dyslexia may stem from how the brain processes sight and sound together rather than simply a problem decoding the written word. They go on to suggest "For the first time, there is evidence that dyslexia is a *multi-sensory disorder*. It is not solely a problem with visual processing or with language", "our study suggests that it is actually a problem combining visual information with auditory information. "Early reading involves matching what you see with what you hear. The sights and sounds of words are inappropriately matched. So, while the average person very quickly matches the written word "dog" with the sound "dog", a child with dyslexia may have much more difficulty".

Turning again to the text of the body of the critique, there is a precis of the theory of neurological organisation underpinning patterning. "According to this theory" the authors consider that, "the majority of cases of mental retardation, learning problems, and behaviour disorders are caused by brain damage or improper neurologic organisation. Current information does not support these contentions". On this issue alone has the AAP ignored or completely missed the plethora of peer reviewed, journal published, investigative research papers, suggesting, by brain scanning autistic subjects, with the latest high definition MRI, CAT, and PET scanners, and identifying lesions in various parts of the autism forming brain.

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www.medicalhomeinfo.org/health/Downloads/EIBrochureF.pdf. to which autistic children should be referred to for therapy as the basis for Early Intervention

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