
C7: Recent changes in Orthotic management of children with neuropathic onset scoliosis: implications for seating provision.

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Learning objectives:

- Gain an understanding of the need for early intervention in spinal management
- Gain an understanding of how dynamic elastomeric fabric orthoses work
- Gain an understanding of the importance of mobility with seating systems

Session description:

Introduction

Spinal orthoses have been used for over 30 years in an attempt to control neuropathic onset scoliosis and not an effective method of controlling the scoliosis. They only improve sitting in wheelchairs (Allam and Schwabe, 2013). Patients often report poor compliance (Tsirikos, 2010) and pain due to atypical spinal loading patterns (Ramstad, 2011).

Method

A retrospective review of clinical practice of 5 paediatric centres in the south of England identified current treatment in 180 children with neurological onset scoliosis. A search matrix ensured all relevant data could be extracted from the clinical notes by a University employed researcher. The data was analysed by the co-authors of this paper.

Results

Out of 180 reports, 121 participants were wearing dynamic elastomeric fabric scoliosis suit orthoses (DEFO). The participants were split into three groups based on presentation:

- Prophylactic prevention consisted 60 (100%) children with low tone trunks
- Scoliosis developing group [22/43 (51% of the group)]
- Confirmed scoliosis [39/77(45%)] Rigid bracing accounted for only [18/77(23%)] of the confirmed scoliosis group showing 41 children not

wearing anything at all in the curve developing and confirmed group. Only 8 of 18 children wearing rigid brace continued usage. Eight children using DEFOs and undergoing regular x-ray checks, experienced reduced Cobb angles.

Discussion

Early intervention of children at risk of scoliosis is now understood. Most of the children with worsening curves are wheelchair dependant (Gross Motor Functional classification scale (GMFCS) level 4/5, with most progressing to surgical intervention(Graham, 2013). The use of DEFO scoliosis suits offers an alternative long term management strategy, as the child is taught different postural position, which can continue to adulthood. Increased proprioception through compressive and translational input from the scoliosis suit improve the client's body self-image resulting in reduced spinal deterioration and surgery in GMFCS Level 4 (Matthews, 2016).

Content references:

- ALLAM, A. M. & SCHWABE, A. L. 2013. Neuromuscular Scoliosis. *American Academy of Physical Medicine and Rehabilitation*, 5, 957-963.
- GRAHAM, K. H. The Right Treatment for the right child. *American Academy of Cerebral Palsy and Developmental Medicine*, 18th October 2013 2013 Milwaukee. Elsevier.
- MATTHEWS, M ; BLANDFORD,S ; MARS DEN,J ; FREEMAN,J 2016. The use of dynamic elastomeric fabric orthoses suits as an orthotic intervention in the management of children with neuropathic onset scoliosis: a retrospective audit of clinical case notes. *Scoliosis and Spinal Disorders*, 11:14, 1-10.
- RAMSTAD, K. J., R; SKEJELDAL,O; DISETH,T 2011. Characteristics of recurrent musculoskeletal pain in children with cerebral palsy aged 8 to 18 years. *Developmental Medicine & Child Neurology*, 53, 1013-1018.
- TSIRIKOS, A. I. 2010. Development and treatment of spinal deformity in patients with cerebral palsy. *Indian Journal of Orthopaedics*, 44, 148-158.

C8: The Winter Paralympics: South Korea 2018

Kendra Betz, PT

Learning objectives:

Following this session, the audience will...

1. Be able to list the five events of the 2010 Winter Paralympic Games
2. Gain an understanding of the Paralympic athletes and the types of disabilities represented at each event.
3. Be able to briefly describe the assistive technologies utilized in each Winter Paralympic event relative to disability specific impairments.

C9: The changes in the role of a Community Seating and Wheelchair therapist following the Canterbury Quakes

Helen Lappin, OT

Learning objectives:

1. Describe the experience for both health professionals working locally in the community, and clients with disabilities within the Canterbury area following the two major earthquakes
2. Identify key areas for health professionals to consider to optimise function and well-being of client's both pre and post-earthquake
3. Discuss key changes in wheelchair and seating-related equipment provision for local clients based on therapist and technician observations

Session description:

As one of the few therapists involved directly in working with clients pre and post the Christchurch earthquakes of 2011/2012, and the more recent "Kaikoura" earthquakes in 2016, it became apparent that there are specific needs of the people with disabilities following these earthquakes. Given that New Zealand is located on fault lines within the "ring of fire", the chances of this occurring elsewhere within our country is high. By sharing the knowledge that was gained through this experience, I aim to prepare other therapists by detailing the challenges encountered locally following these catastrophic events

The Christchurch and North Canterbury earthquakes provided very different experiences for both staff and clients working on the ground. Both had their own challenges - the gravity of dealing with clients following an earthquake within your own community while trying to deal with the after effects yourself personally, compared with the difficulty of managing client needs remotely due to

a significant limitation of communication and physical access to the area.

The images everyone saw repeatedly around the world on the News, did not accurately portray the daily challenges we struck as health professionals on the ground. Therapeutic input, regardless of location, begins with the initial emergency related needs, but should not ever underplay the prolonged effect on everyone within the area. Many Cantabrians are still dealing with housing repairs, job loss, and PTSD. Understandably these things are often more compounded for my client group when dealing with this on top of the general day to day challenge/s of living with a disability. The aim of this presentation is to stock other professional's "disaster kits" with valuable skills and knowledge from our experience and what we have learnt locally, including specific seating and wheelchair related changes.