

SEATING AND MOBILITY FOR EARLY INTERVENTION

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Introduction

This presentation will take a clinical look at seating and mobility for the birth to 3 year old population. Many babies and young children have been identified with neurological and orthopedic diagnoses that have seating challenges. The commercially available strollers and car seats often do not accommodate the infant with special needs. Premature babies are being treated in Newborn Intensive Care Units (NICU) around the country with uncertain outcomes for developmental milestones. Three case studies will be presented of infants/children of different ages and disabilities and sizes.

Gross and Fine Motor Development

Gross Motor: In development of normal children¹, from 6-10 months a child should be able to get to sitting without assistance, 7-8 months of age a child develops the ability to demonstrate balance reactions in sitting and 8-9 months will sit without hand support.

Infants who have independent sitting abilities will eventually sit hands free to allow manual skills to develop. Head and trunk control are key components to successful sitting and many of our special needs young infants are struggling to gain one or both of these skills. Sitting is the position that enables an infant to have the ability to view the world and explore both visually and manually. Supported sitting is important especially for our physically challenged infants for fine motor, feeding, respiration as well as a factor in sensory experiences and exploration.

Fine Motor: In supported sitting, fine motor skills² in supported sitting begin with grasping a rattle at 4 months and shaking a rattle at 6 months, securing a piece of paper at 5 months and grasping a cube at 6 months. These fine motor skills are tested sitting on a lap, facing a table. Sitting on a lap gives the infant a flexed supported position from head to toe. Full extension or high muscle tone can be reduced in a well flexed supported sitting position.

Unfortunately, the special needs child does not have the ability to independently sit and will often rely on hands to maintain a supported sitting position. They will either hold on to armrests, seat or other stabilizers.

Safe supportive sitting becomes a priority over performing any fine motor activities. Infants are often seen "posturing" head and neck muscles to fix their stabilized position which also makes it difficult for safe feeding.

Personal and Social³

At the 5-9 month level, infants lift arms to parent and they begin to play pat-a-cake. These skills require hands free supported sitting. Lifting arms is an anti-gravity movement that challenges head and trunk stability. Playing ball is a 9-15 months skill that may require 2 hands as does drinking from a cup beginning at 9 months.

Case Studies

¹ HELP Hawaii Early Learning Profile, HELP Checklist, 1984-1994, VORT Corporation

² Peabody Developmental Motor Scales PDMS, Examiner Record Booklet, 2000, 1983, PRO-ED, Inc.

³ Denver Developmental Scale II, DOM, Inc., Catalog #2115, 1990

Clinical case studies will be presented to discuss the problems this young population faces.

The first infant is a triplet who has cerebral palsy spastic quadraparesis. He is a delightful social little boy who was born one month prematurely. His brother and sister are normally developing.

The second child has spina bifida and has an older brother with autism. She is an active child who is mobile on protective flooring but is not independently mobile outside in the community.

The third child has arthrogryposis and although she is older, her size is very small and finding a supportive insert is very challenging. She will be moving independently in a power chair.

Conclusion

Present size and future growth for seating and mobility pediatric equipment has been a challenge for both the clinician and the rehab manufacturer. The professionals and clinicians who work with these young children should work together. In a team effort, therapists should share some of their experiences and challenges to guide manufacturers in designing and producing supportive seating and interfacing them with appropriate mobility bases to meet the needs of this population.

Speaker Bio

Delia "Dee Dee" Freney-Bailey, OTR/L, ATS has been an Occupational Therapist with California Children Services since 1978. She became a branch manager providing assistive technology in 1996. She is presently a contract therapist for a Pediatric Contracting Service and has school based and Early Intervention clients in the San Francisco Bay area in California. Dee Dee is also in Private Practice as an educational presenter and clinically gathers case studies for manufacturers.