



# Gait Society Presentation: DEVELOPMENT OF UPRIGHT POSTURES AND MOVEMENT IN CHILDREN

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## INTRODUCTION

Children do not learn to stand and walk overnight. Upright postures and movements evolve in the womb and gain precision and strength as the fetus and infant develops. Yet most of the goals prosthetists and orthotists set for children with limb loss and neuromuscular impairments focus on standing and walking with lack of understanding how these movements develop.

How upright postures and movements develop depends on the infant's health and musculoskeletal conditions and social and environmental factors. When that development is disrupted, as in the case of the child with limb loss or dysfunction, it is important for the clinician to understand typical development. This understanding enables the establishment of realistic goals and the proper assessment of O&P interventions in an appropriate context.

The complexities of the growing child can make clinical treatment challenging. These challenges are often compounded by the reality that, for many clinicians, children are a very limited subset of a much larger adult patient population.

## PURPOSES

The purposes of this symposium are to:

1. Discuss the development of weight bearing in infants and young children
2. Define upright postures and movements
3. Evaluate the characteristics of upright postures and movements including early walking
4. Compare and contrast the impairments seen in children with congenital vs. acquired conditions
5. Identify challenges with measuring outcomes in infants and young children
6. Discuss the impact of O&P interventions on children having challenges in the acquisition of upright postures and movements and the appropriate age for prosthetic component prescription

7. Discuss social and environmental factors that may have an impact on O&P interventions

## RESEARCH

The seminar will include a review of recent research addressing infant motor development and the biomechanics of locomotion in infants and toddlers with a prosthesis. (Selected references are listed below.)

In addition, the seminar will consider future research needs and directions with a distinct understanding of both basic and applied research.

## CLINICAL CONSIDERATIONS

Finally, the seminar will describe practical clinical considerations when dealing with children in prosthetics and orthotics. These considerations will include:

- Current options for and future development of pediatric components,
- Considerations for alignment in pediatric P&O, and
- Understanding of the implications of weight and height restrictions in currently available components.

## REFERENCES

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**American Academy of Orthotists & Prosthetists  
38<sup>th</sup> Academy Annual Meeting and  
Scientific Symposium  
March 21-24, 2012**