Course Description • 2-Session Live Webinar

Developmental Orthopedics

A Review of Operating Processes with Implications for Management

TARGET AUDIENCE: Occupational therapists.

LEVEL: INTERMEDIATE – Pre-course readings are assigned.

Course Description

This 2-day program features an overview of somatosensory function and development; the role of postural control in movement acquisition and physiologic adaptation of limb muscles; skeletal modeling mechanisms and influences; and ideal and pathomechanical features of orthopedic development of the trunk, shoulder girdle, and upper and lower extremities.

Course Objectives

Participants completing this course are expected to be able to:

- Describe these features of normal, postnatal immaturity of skeletal structure and alignment: thoracolumbar kyphosis, hip flexion contracture, genu varum, and leg and foot medial rotation.
- Distinguish between strain and load and apply this distinction to the skeletal modeling process and to modeling potential in an aging child.
- Relate movement-based loading history to bone growth rate in children.
- Explain the significance of the innate drive for verticality.
- Discuss the significance of postural control in movement acquisition and limb use.
- Explain the presence of symmetry in supine and prone positions at age 4 months as evidence of fundamental postural control.
- Describe how the normal neonatal hip flexion contracture influences the early modeling of the lumbar spine in the sagittal plane.
- Relate ideal, full-term neonatal lower limb joint alignment to the acquisition of skilled transitions between quadruped and sitting positions.
- Relate the achievement of competent weight shifting in the frontal plane in prone to emerging limb use.
- Discuss SA Sahrmann's proposed management sequence after identifying dominant muscles.
- Explain the apparent impact of direction-specific postural responses on the development of common contractures in ambulatory children with diplegic cerebral palsy and idiopathic toe walking.
- Explain the potential somatosensory and therapeutic benefits of optimizing functioning postural alignment, the base of support, and functioning joint alignments in daily life.

Program Schedule

(All times PM, Pacific DST.)

Session 1 • August 22, 2021

Start	Topic	Contact minutes
3:00	An Overview of Developmental Changes in the Spine and Lower Extremities	20
3:20	Strain and Load: Shaping Bones and Joints with Skeletal Modeling	40
4:00	Break – 5 minutes	-
4:05	Proximal Before Distal: Contributions of Postural Control Acquisition & Maintenance to Orthopedic & Neuromotor Development	65
5:10	Break– 5 minutes	-
5:15	Biomechanical Advantages to Orthopedic Development of Full-Term Gestation	40
5:55	Movement-Related Skeletal Modeling Opportunities	50
6:45	Questions - discussion	15
7:00	Adjourn Day 1 didactic **contact hours:**	3.75

Session 2 • August 23, 2021

Start	Topic		Contact minutes
3:00	Ideal Lower Limb Soft-Tissue Extensibility - Evidence of Use History		70
4:10	Short break – 5 min		-
4:15	The Role of Postural Control Deficits in Deformity Development		70
5:20	Short break – 5 min		-
5:25	Limb Length Inequality: Assessment & Implications		30
5:55	Carry-Over Strategies for Improving Postural Control		30
6:25	Short Break – 5 minutes		-
6:30	Carry-Over Strategies for Improving Postural Control, continued		15
6:45	Questions - discussion		15
7:00	Adjourn	Session 2 didactic **contact hours:**	**3.75**
		Total didactic **contact hours:**	**7.5**

Thanks for joining us!

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Beverly Cusick, PT, MS, NDT, COF/BOC – Brief Biography

EDUCATION:

- 1972 - BS in PT from Bouve College at Northeastern University (Boston) in 1972, summa cum laude.
- 1988 - MS in Clinical and College Teaching for Allied Health Professionals - University of Kentucky.

WORK EXPERIENCE:

- 1 year – PT staff at (now) Spaulding Rehabilitation Center, Boston, MA
- 3 years – PT staff and Director for UCP Center, Lawrence, MA
- 9 years - PT staff at Children's Rehab. Center (now, Kluge Center), Charlottesville, VA.
- 3 years - PT Education faculty, College of Health-Related Professions at Medical university ofSouth Carolina (MUSC), Charleston, SC, and Director of PT Services for the Division ofDevelopmental Disabilities at MUSC.
- 1 year, consultant, Cardinal Hill Hospital's Head Trauma & Pediatrics teams – Lexington, KY.
- 4 years, assisting in the PT Department at Children's Hospital at Stanford, Palo Alto, CA.
- 31 years in private practice.

PUBLICATIONS:

- Help Patients Manage Equinus Deformity. *O&P Business News*, 2011; April: 74-77.
- Orthotic Management of Low-Toned Children: The Earlier the Better. (Co-author). *O&P Edge*. 2011;Apr: pp. 24-29.
- Serial Casting and Other Equinus Deformity Management Strategies for Children and Adults withCNS Dysfunction. 2010. Published by Progressive GaitWays.
- *Foot Talk.* 2009. A DVD of a 2-hour lecture on functional foot anatomy and closed chain biomechanics,accompanied by a CD with a set of Power Point handouts of the same lecture.
- Serial Casting for the Restoration of Soft Tissue Extensibility in the Ankle and Foot (2007 and2009).
- Legs & Feet: A Review of Musculoskeletal Assessments (1997, revised 2015), an instructionalDVD.
- *Lower Extremity Developmental Features.* 2000. A home study monograph for the APTA's OrthopedicSection.
- Progressive Casting and Splinting for Lower Extremity Deformity in Children with Neuromotor Dysfunction1990. Published by Therapy Skill Builders.
- Several textbook chapters, articles for journals, conference proceedings, and professional newsletters,including a series (2006 and 2007) on Pediatric Orthopedics for the *NDTA Network*.

CLINICAL TEACHING:

Guest lecturer for conferences sponsored by the APTA, the NDTA, and the American Academy of CP and Developmental Medicine, in the US and Canada; the British Association of Prosthetists and Orthotists; Enable Ireland; theAmerican Academy of Orthotics and Prosthetics, the American Orthotic and Prosthetic Association, and the Queensland Paediatric Physiotherapy Clinical Network.

Instructor of more than 460 courses, by invitation only, in 19 countries.

Associate Professor for the Rocky Mountain University of Health Professions – Pediatrics Program – Provo,Utah, 2006 to present.

Since 1993 Ms. Cusick has been consulting and practicing privately in Telluride, Colorado. There, she devotesmost of her professional effort to generating literature and educational materials, to teaching, and to developing therapeutic products, including her invention, TheraTogs orthotic systems.

A curriculum vita is available upon request.