

THERAPEUTIC CASTING FOR THE LOWER EXTREMITY

Techniques to Improve Joint Alignment for Function

Course Information

Location:

Location: Marymount University, Program 4040 North Fairfax Drive Arlington, VA 22203

Dates: July 23-25, 2026

Lab Clothing: Casting materials *may permanently stain clothing*, so plan accordingly. Please wear have the limbs available from the upper arm through the hand (long sleeves may be stained during cast applications), and the knee through the foot for lab portions. Cover-ups are recommended between lab portions, as room temperatures may vary.

CEUs: This course provides 22 contact hours. Certificates will be provided when daily sign in sheet and course evaluation are completed.

Individual Responsibility: This course is a hands-on learning environment in which participants will be performing challenging techniques and will be evaluated by and treated by other course participants. It is not possible for the instructor and assistants to monitor all participants at all times. It is the responsibility of each participant to monitor and limit her/his participation as need, both in delivering and receiving techniques.

Course Attendance: Each participant is expected to attend at all times for the days which they are registered to be competent with course material and to be eligible to receive CEUs.

Course Format

Therapeutic Casting for the Lower Extremity is a 3-day, 22 hour course. In this course, we will cover foot and ankle function and dysfunction, the evidence related to serial casting, special tests, differential diagnosis, preparatory manual therapy techniques, multiple casting techniques and their selection based on a clinical pathway, and gait kinetics and kinematics. There are dedicated lab opportunities for each therapist to become competent in relevant casting techniques, and the fabrication of removable splints for use as an adjunct to casting. Labs allow the group to feel comfortable to move forward with casting after course completion.

Instructor

The course was developed and is instructed by Amanda Hall, PT, MPT, PCS. Amanda received her MPT from the University of Washington in 2001, received her board certification as a Pediatric Clinical Specialist in 2010, and was re-certified in 2020. Amanda began teaching clinical education with serial therapeutic casting courses and has since developed additional coursework based on an integrative approach to treatment for patients with pediatric and neurological health conditions. Her clinical practice is at Children's National Rehabilitation and Specialized Care (formerly the HSC Pediatric Center) in Washington, DC, where she specializes in treating "outliers" and patients with complex presentations. Her framework is grounded in PNF principles, therapeutic alliance, neuroplasticity, manual therapy, therapeutic gait, and developmental kinesioplasty. Her framework has a strong focus on patient-centered treatment and adaptive design. As a result, she has received mainstream media attention as the "Madcaster", including features on MTV.com, UsWeekly, and ABC. Amanda has presented internationally; notable audiences include the Combined Sections Meeting of the American Physical Therapy Association, the APTA Pediatrics Annual Conference, and the National Institutes of Health. ***Therapeutic Casting of the Lower Extremity was selected and presented as a pre-conference course for the Combined Sections Meeting of the American Physical Therapy Association in 2019.***

Course Description

This course will provide the knowledge base and practical skills for the use of casting materials to manage common impairments in pediatric and neurologic patient populations. Participants will learn to identify appropriate candidates for casting, problem-solve which materials and techniques are appropriate for various clinical presentations, and evaluate progress. The course will emphasize the current evidence related to casting and foot/ankle intervention, the importance of differential diagnosis, and the use of the therapist's manual intervention before and during casting to maximize the therapeutic effects of casts. Attendees will learn to align casts optimally for therapeutic gait and standing. The course includes the fabrication of removable casts/splints for the ankle and knee. The course will include multiple opportunities to learn and apply hands-on practical skills which will be carried over to the clinical setting after course completion.

Audience: Physical therapists and physical therapist assistants, occupational therapists, and occupational therapy assistants, as well as students of those fields with special permission.

Course Objectives

At the conclusion of this course, participants will be able to:

1. Discuss candidate identification for serial casting using the ICF model, including rationale, assessment, considerations, precautions, and contraindications.
2. Contrast various materials used for serial casting and splinting, with their different properties and benefits for use for varied therapeutic goals.
3. Describe a variety of casting techniques that might be employed depending on patient presentation and goals.
4. Demonstrate assessment for lower extremity serial casting, including gait, weight-bearing and non-weight-bearing alignment, tone, and tri-planar, multi-joint ankle and foot mobility.
5. Discuss and perform soft tissue mobility assessment and mobilizations before and during cast application.
6. Describe basic concepts of shank kinematics as they relate to cast and orthotic design.
7. Apply a lower extremity serial cast with appropriate alignment of joints and application of casting materials, utilizing effective body mechanics.
8. Fabricate removable lower extremity splints for use as an adjunct to casting.

Course participants will receive a detailed electronic manual with assessment and background information, a guide to casting materials, step-by-step instructions, and a recommended competency assessment.

Course Schedule (22 Contact Hours)

Day 1 (7.5 contact hours)

9:00-9:30 am Therapeutic Casting Framework based on the ICF Model

Overview of casting

Review of relevant literature

Framework for proposed technique:

Addressing drivers and contributing limitations

Identifying directional susceptibility to movement and relative stiffness

Aligning the hindfoot to allow for dorsiflexion to occur at the talocrural joint

Position of patient and therapist for effective and efficient treatment

Directed input of cast

Segmental application

Use of clinical reasoning throughout cast application

9:30-10:00 am Ankle and Foot Function

Functional state: multi-joint, tri-planar motion, muscular function
Structural variants and relevant orthopedic impairments

10:00-10:30 am Hindfoot Alignment Diagnostic Groups

Neutral Hindfoot
Supinated Hindfoot
Pronated Hindfoot

10:30-11:45 am Lab: Lower extremity casting examination and evaluation

Weightbearing examination
Non-weight bearing examination
Integumentary
Bony structure
Muscular activity and length
Soft tissue extensibility
Alignment and joint motion: hindfoot, midfoot, forefoot
Talocrural range of motion
Dorsiflexion Goniometry: Establishing intra- and inter-rater reliability
Evaluation: making a plan for pre-casting intervention based on lab findings

11:45-12:30 pm Lab: Foot and ankle manual intervention to address ankle alignment and dorsiflexion in preparation for casting

Techniques to address patient stress, guarding, and tonic muscle contraction
Techniques to improve soft tissue mobility
Techniques to improve joint alignment and mobility

12:30-1:30 pm Lunch

1:30-2:45 pm Lab: Casting techniques, patient in sitting (groups of 2, each partner gets to practice)

Circumferential wrapping
Selective reinforcement
Combination of materials
Creating an anchor
Use of elastic tension and direction of pull to influence tissue and joint mobilization
Creating a heel lock
Selective support on one side of distal extremities
Forming a functional weight-bearing position for the forefoot
Use of spacers

2:45-3:15 pm Lecture and demonstration: Casting Materials and Tools

Required tools, Properties of materials, Principles of material selection, Safety considerations
Putting it all together:
Integrating examination findings to select appropriate techniques
Combining isolated techniques into a cast

3:15-3:45 pm Demonstration: Application of cast using learned techniques

3:45-4:45 Lab: Casting

Examination and evaluation
Position of patient/casting team
Pre-casting treatment
Cast plan
Cast application:
Demonstration of techniques:
Direction of pull
Varying tension
Hindfoot lock

2-person hindfoot mobilization
Selective reinforcement
Weight-bearing position of the forefoot

4:45-5:30 pm Group Activity

Review of casts: alignment, function, trouble-shooting and clinical fixes

Day 2 (7.5 contact hours)

9:00-10:00 am Lecture: Introduction to the use of therapeutic casts to address gait impairments

Discussion of relevant gait kinetics and kinematics

Three gait impairment groups associated with limited dorsiflexion:

Shank angle WFL (toe walking)

Excessively reclined shank (knee hyperextension)

Excessively inclined shank (crouch)

Cast design strategies to influence gait kinetics and kinematics for each group during loading response, weight acceptance, and terminal stance

10:00-10:45 am Small Group Activity: Case Studies

Calculating and cutting posts to best impact shank kinetics with regard to sagittal and coronal plane findings

10:45-11:30 am Lab: Prone Techniques, "patient" in prone using a case study

Circumferential wrapping

Selective reinforcement

Combination of materials

Creating an anchor

Use of elastic tension and direction of pull to influence tissue and joint mobilization

Creating a heel lock

Selective support on one side of an extremity

Forming a functional weight-bearing position for the forefoot

11:30-12:15 pm Lab: Aligning casts for therapeutic gait, using mold and case study

Determine the angle and cut posting material to align for therapeutic gait

12:15-1:15 pm Lunch

1:15-2:15 pm Lab: Casting

Position of patient/casting team

Description of pre-casting treatment

Cast plan

Cast application using selected prone techniques from the cast plan

2:15-2:30 pm Group Activity

Review of casts: alignment, function, trouble-shooting and clinical fixes

2:30-3:00 pm Demonstration: Putting it all together

Advanced Casting Demonstration

Use of clinical reasoning pathway

Aligning for therapeutic gait

3:00-4:15 pm Lab: Casting in sitting

Examination and evaluation

Position of patient/casting team

Pre-casting treatment

Cast plan: Advanced application of clinical pathway

Cast application

Demonstration of selected techniques according to cast plan

Aligning for therapeutic gait

4:15-4:30 pm Group Activity

Review of casts: alignment, function, trouble-shooting and clinical fixes
4:30-5:30 pm Group Activity
Therapeutic exercise to maximize effects of casting

Day 3 (7 contact hours)

9:00-9:45 am Lab: Questions and review of advanced casting skills

Creating the toe shape
Heel locks
Calculating and cutting posting
Creating a cast plan based on differential diagnosis

9:45-10:15 am Patient Demo: application of therapeutic casts

10:15-11:45 am Lab: Casting

Examination and evaluation
Position of patient/casting team
Pre-casting treatment
Cast plan
Calculating and cutting post
Cast application: demonstration of techniques: direction of pull, varying tension, hindfoot lock, hindfoot mobilization after hindfoot cast application, selective reinforcement, weight-bearing position of the forefoot

11:45-12:15 pm Group Activity

A review of casts: alignment, function, trouble-shooting and clinical fixes

12:15-12:45 pm Lunch

12:30-2:30 pm Lab: Casting Prone/Supine

2:30-3:00 pm Lab: Fabrication

Clamshell knee extension splints for use with serial casts and knee PROM

3:00-3:45 pm Lab: Fabrication

Night-stretch temporary AFO/splint

3:45-4:30 pm Lab: Fabrication

Ambulatory AFO with posting for gait training
Review of cutting posts to align casts for therapeutic gait
Using mold and case study
Determine the angle and cut posting material to align for therapeutic gait
Fabricate therapeutic AFO

4:30-5:00 pm Lab: Techniques for finishing of splints, trouble-shooting and clinical fixes

Instructor curriculum vitae:

**CURRICULUM VITAE
Amanda Hall, PT, MPT
Board Certified Pediatric Clinical Specialist**

Related Expertise

20+ years of casting and splinting experience, 9 years of teaching casting continuing education courses, taught therapeutic casting as a pre-conference course for the Combined Sections Meeting of the American Physical Therapy Association in 2019.

Education

University of Washington, Seattle, WA
Master of Physical Therapy 2001

University of Washington, Seattle, WA
Bachelor of Arts, Spanish 1999

Certification

Pediatric Clinical Specialist (PCS)
Board Certified Specialist in Pediatric Physical Therapy, American Board of Physical Therapy Specialties Certification, certified 2010, recertified 2020

Publications

Cobb, L. P., Shane, K. A., McGee, P. N., Nesbit, C., Brennan, E., Moore, J., Girolami, G. L., Dannemiller, L., Donaldson, C., Boynewics, K., Carey, H., Chase, K. M., Hall, A., Jones, M., O'Shea, R. K., & Zipp, G. P. (2025). Movement System Diagnosis: A Consensus-Based Position for Pediatric Movement Specialists. *Pediatric physical therapy : the official publication of the Section on Pediatrics of the American Physical Therapy Association*, 37(2), 257–264. doi.org/10.1097/PEP.0000000000001186

Will J, Shin MR, Jerome B, Feitl K, Hall A, Morozova O. Keeping patients moving: Understanding appropriate adaptive devices for positioning and mobility. *Curr Probl Pediatr Adolesc Health Care*. 2025;55(11):101879. doi.org/10.1016/j.cppeds.2025.101879

Peer Reviewed and Invited Presentations

Combined Sections Meeting of the American Physical Therapy Association (CSM) 2026
Front and Center: Sagittal Versus Coronal Plane Decision Making in Orthotic Prescription and Design

Combined Sections Meeting of the American Physical Therapy Association (CSM) 2023
Welcome to the Resistance! Supercool PNF to Improve Pediatric Trunk, Foot and Ankle Function
Preconference Course, Co-Presented with Mary Massery, PT, DPT, DSc

Combined Sections Meeting of the American Physical Therapy Association (CSM) 2023
Who's Afraid of Wolff's Law? Developmental Movement System Model: Leveraging Multisystemic Plasticity for Long-Term Outcomes, Education Session

Academy of Pediatric Physical Therapy Annual Conference (APPTAC) 2022
The Ins and Outs of Pediatric Pain and Program Development, Education Session

Academy of Pediatric Physical Therapy Annual Conference (APPTAC) 2022
Life's a Sport: Building foundational skills to increase gait fluency in new environments using a sports approach, Education Session, Presented with Nechama Karman, PT, MS

Combined Sections Meeting of the American Physical Therapy Association (CSM) 2022
From Foe to Friend: Eccentric Training for the PlantarFlexors in Children with Cerebral Palsy
Education Session, Presented with Nechama Karman, PT, MS

Academy of Pediatric Physical Therapy Annual Conference (APPTAC) 2021
Neuroplasticity Interventions for Pediatrics: Clinical Application of Current Neuroscience Concepts to Combat Meta-Effects of Neurological Changes and Maximize Functional Outcomes, Education Session

National Institutes of Health, March 2020
Developmental Kinesiopathologic Model, Rehabilitation Grand Rounds

Combined Sections Meeting of the American Physical Therapy Association (CSM) 2020
Are We Underserving the Pediatric Ankle? Supporting Development through a Multi-System Approach, Education Session

Academy of Pediatric Physical Therapy Annual Conference (APPTAC) 2019
Orthotic Device Design Using Movement System Diagnoses As A Guide, Education Session

Combined Sections Meeting of the American Physical Therapy Association (CSM) 2019
Update on Therapeutic Casting: A Modern Clinical Pathway to Improve Outcomes
Preconference Course

National Committee Service

APTA Academy of Pediatrics CSM Programming Committee. 2020 - Present
APTA Academy of Pediatrics Movement Systems Committee, 2024 - Present

Clinical Experience

Children's National Hospital, Rehabilitation and Specialized Care (formerly the HSC Pediatric Center), Washington, DC

Physical Therapist, Orthotics, Prosthetics, and Equipment Department March 2014 – Present

Clinical Specialist, Inpatient Rehabilitation, November 2009 - March 2014

Physical Therapist, Outpatient Rehabilitation, September 2008 - November 2009

- Outpatient, inpatient, and clinic-based care for children and young adults with complex health care needs.
- Developed casting and splinting program for lower and upper extremities, including development of techniques and staff mentorship across multiple sites.

Private Practice, Washington, DC

Physical Therapist, Pediatric and Adults, foot/ankle specialty, November 2012 – Present

Georgetown University Hospital, Washington, DC

Pediatric physical therapist, Physical Medicine and Rehabilitation, June 2003 –July 2008

- Serial casting

California Children’s Services, County of San Diego, CA

Physical Therapist, Vista Medical Therapy Unit, March 2002 - May 2003

Teaching Experience

Instructor:

Ambulation, Activity, and AFOs: Addressing the Ankle to Improve Gait and Function (12.5 hour CEU course)

Online: US-Hosted: Multiple sessions 2020-Present, Education Resources, Inc

Online, European-hosted: May 2021

In Person: Texas Children’s Hospital, 2021, 2024; Washington, DC 2023; Dublin, Ireland 2023

Therapeutic Casting for the Lower Extremity (3 day in person CEU course)

Multiple locations, 2017-Present

Therapeutic Casting of the Upper Extremity (1-2 day in person CEU course)

Multiple locations, 2017-Present

Plantar Power: A multimodal approach to treatment of the foot and ankle in pediatrics (14 hour CEU course)

Santa Barbara, CA: October 2023. Co-presented with Nechama Karman, PT

For the Love of Little Feet: Addressing the Pediatric Ankle to Improve Gait and Function (10 hour CEU course)

Online: US-Hosted by Therapeutic Services, Inc: 2022-Present

Foot Club: Taking Ankle Intervention Beyond the Dome (6.5 hour webinar)

California Physical Therapy Association, April 2021

For the Love of Feet! (2 hour webinar)

California Physical Therapy Association, March 2021

Plotting the Cortical Map: Using Neuroplasticity to Improve Motor Control (1.5 hour webinar)

Mobility Research, February 2021

The Developmental Kinesiopathologic Model

California Childrens Services of San Diego: Grand Rounds, January 2021

Therapeutic Casting of the Lower Extremity, Webinar Workshop

Oregon Health Sciences University, Child Development and Rehabilitation Center December 2020

Treating the “Flat Foot”: A Complex Movement Systems Approach to Improve Outcomes (6 hour webinar)

Online: December 2020

Adapted Orthotic Interventions for Global Health Ambassadors (1 day CEU course)

September 2019, Washington, DC, Presented with Jonas Ljung CPO, MSPO

Foot and Ankle Management for Therapeutic Gait: Serial Casting and Bracing Considerations (1.5 hour webinar)

Mobility Research, June 2019

Awards

Healthcare Council of the National Capital Area

2017 Employee of the Year for Exceptional Service in Healthcare for the HSC Health Care System

Kids In Action Adaptive Activities Program

2016 Hope Award

Additional Information:

Contact us at info@amandahallpt.com for any additional documentation needed to support a state-specific approval request.