FRIDAY SESSIONS

Neurobiology of Postural Control: Supporting Upper Extremity Function
Gretchen Reeves, PhD, OT/L

Interconnections Between the Pelvis, Trunk & Shoulder Girdle: The Essentials of Postural Control & Its Influence on Proximal Upper Extremity Function
Lezlie Adler, OTR/L (Pediatric Track)
Beth Tarduno, OTR/L (Adult Track)

Strategies to Increase Upper Extremity Function: Focus on the Interaction between Postural Control and the Control of the Proximal Upper Extremity
Lezlie Adler, OTR/L (Pediatric Track - Lab A)
Diane Fritts-Ryan, OTR/L (Pediatric Track - Lab B)
Beth Tarduno, OTR/L & Mechthild Rast, PhD, OTR/L (Adult Track Lab)

SATURDAY SESSIONS

Sensory/Perceptual Contributions for Reach and Prehension
Gretchen Reeves, PhD, OT/L

Neuro-Developmental Treatment of the Distal Upper Extremity: Where Are We in 2009?
Kimberly Barthel, OTR (Pediatric Track)

Interconnections Between the Elbow, Forearm, Wrist & Hand: The Essentials of Distal Upper Extremity and Hand Function
Beth Tarduno, OTR/L (Adult Track)

Strategies to Increase Upper Extremity Function: Focus on the Forearm, Wrist and Hand
Kimberly Barthel, OTR (Pediatric Track - Lab A)
Mary Hallway, OTR/L (Pediatric Track - Lab B)
Beth Tarduno, OTR/L & Mechthild Rast, PhD, OTR/L (Adult Track Lab)

SUNDAY SESSIONS

Combining NDT with Adjuncts: Handling and Beyond
Audrey Yasukawa, MOT, OTR

From No Hand Function to Juggling: Case Study of a Man With Hemiplegia.
Mechthild Rast, PhD, OTR/L

Panel Discussion: Answering Your Clinical Questions
Moderator: Lezlie Adler • Panelists: Christine Cayo, Diane Fritts-Ryan, Mechthild Rast, Audrey Yasukawa

REGISTER EARLY! SPACE IS LIMITED!

Neuro-Developmental Treatment Association • (800) 869-9295 • www.ndta.org
KEYNOTE SESSION
NEUROANATOMY AND NEUROPHYSIOLOGY SUPPORTING UPPER EXTREMITY FUNCTION

Presented by Gretchen Dahl Reeves, PhD, OT, FAOTA
Associate Professor, School of Health Sciences
Eastern Michigan University
Friday, October 2 • 8:30 am – 10:30 am
Saturday, October 3 • 8:00 am – 10:30 am

In this two-part session, Dr. Reeves will describe the neurological elements that contribute to upper extremity and hand function. Session one will address the neural mechanisms, primarily operating at subcortical levels, for postural control that support the upper extremity in reaching and moving in space. Session two will further describe the complex sensory and motor systems that serve finer movements of the hands and fingers for object manipulation and tool use.

OBJECTIVES:
• Explain the unique neural organization that supports upper extremity function at subcortical and cortical levels in humans
• Describe the intricate interplay between sensation and movement in gaining control of the upper extremity and hand
• Apply neurophysiological principles to evaluation and intervention in clinical practice

FRIDAY PEDIATRIC TRACK
INTERCONNECTIONS BETWEEN THE PELVIS, TRUNK AND SHOULDER GIRDLE: THE ESSENTIALS OF POSTURAL CONTROL AND ITS INFLUENCE ON THE PROXIMAL UPPER EXTREMITY

Lezlie Adler, MA, OTR/L
Friday, October 2 • 10:45 am – 12:15 pm

Neuro-Developmental Treatment (NDT) takes into account the individual as a whole, recognizing that neural and multiple body systems, plus contextual factors, contribute to overall function. This presentation will focus on the elements in the musculoskeletal, neuromotor, and sensory systems that are essential for postural control and influence the use of the arm in space and support. The NDT framework considers a working knowledge of development, seen in typical posture and movement, to be a critical structure for examining functions, evaluating limitations, and planning interventions. Critical sequences in development essential for proximal upper extremity function will be emphasized. These will be contrasted with compromises in postural control demonstrated in children with neuromotor impairments.

OBJECTIVES:
• Define postural control from a multi-systemic perspective
• Identify the multiple functional uses of the upper extremities that rely on postural control
• Identify critical sequences in development that are essential for the upper extremities to be used functionally
• Articulate the relationship between limitations in upper extremity function based on compromises in postural control

STRATEGIES TO INCREASE UPPER EXTREMITY FUNCTION: FOCUS ON THE INTERACTION BETWEEN POSTURAL CONTROL AND THE CONTROL OF THE PROXIMAL UPPER EXTREMITY

Lezlie Adler MA OTR/L (Pediatric Track A)
Diane Fritts Ryan OTR/L (Pediatric Track B)
Friday, October 2 • 1:45 pm – 3:15 pm
Friday, October 2 • 3:30 pm – 5:00 pm (Sessions Repeat)

These hands-on laboratory experiences will focus on postural control challenges in children with increased stiffness and decreased stiffness. Didactic information and video vignettes will highlight the postural control challenges in children with diagnoses of spastic quadriplegia, diplegia and hemiplegia, as well as athetosis, ataxia, and generalized hypotonia. Each will be followed with demonstration and practice of specific intervention strategies to manage and improve proximal upper extremity control.

OBJECTIVES:
• Identify postural control challenges in children with increased stiffness
• Identify postural control challenges in children with decreased stiffness
• Articulate specific upper extremities functional compromises in support and reach precipitated by inadequate postural control
• Describe a minimum of three new intervention strategies to use in treatment focused on handling, managing sensation, and/or manipulating the environment

FRIDAY ADULT TRACK

INTERCONNECTIONS BETWEEN THE PELVIS, TRUNK AND SHOULDER GIRDLE: THE ESSENTIALS OF POSTURAL CONTROL AND ITS INFLUENCE ON THE PROXIMAL UPPER EXTREMITY
Beth Tarduno, OTR/L
Friday, October 2 • 10:45 am – 12:15 pm

STRATEGIES TO INCREASE UPPER EXTREMITY FUNCTION: FOCUS ON THE INTERACTION BETWEEN POSTURAL CONTROL AND THE CONTROL OF THE PROXIMAL UPPER EXTREMITY
Beth Tarduno, OTR/L & Mechthild Rast, PhD, OTR/L
Friday, October 2 • 1:45 pm – 5:00 pm
The morning lecture and afternoon lab sessions will focus on the relationship between upper extremity function and proximal stability, including a dynamic base of support and postural control. Impairments interfering with postural control and proximal upper extremity control typically found in adults with hemiplegia will be discussed. Examples of various levels of recovery will be presented, including lower- and higher-level functioning clients with upper extremity impairments.

The morning lecture will set the foundation for the afternoon lab session. During the lab, you will learn various treatment strategies to promote postural control and to retrain function in the upper extremity using the NDT Approach. A problem-solving approach will be utilized to help you identify specific impairments that may interfere with function. You will have the opportunity to experience hands-on training to reinforce learning of treatment strategies.

OBJECTIVES:
• Identify critical sequences in typical development that prepare the distal upper extremity for function
• Discuss the implications of sensation and perception upon reach and grasp from an NDT perspective
• Identify compromises in distal upper extremity function based upon systemic impairments

SATURDAY PEDIATRIC TRACK

NEURO-DEVELOPMENTAL TREATMENT OF THE DISTAL UPPER EXTREMITY: WHERE ARE WE IN 2009?
Kim Barthel, OTR
Saturday, October 3 • 11:00 am – 12:30 pm
The science of upper extremity motor control and motor learning has expanded and supported Neuro-Developmental Treatment concepts in the understanding and treatment of distal upper extremity function impairments in children with cerebral palsy. A brief overview of these elements will “merge the science with practice” of treatment strategies for our clients with neuromotor impairments. The lecture will include videotape analysis of these concepts.

OBJECTIVES:
• Identify critical sequences in typical development that prepare the distal upper extremity for function
• Discuss the implications of sensation and perception upon reach and grasp from an NDT perspective
• Identify compromises in distal upper extremity function based upon systemic impairments

STRATEGIES TO INCREASE UPPER EXTREMITY FUNCTION: FOCUS ON THE FOREARM WRIST AND HAND
Kim Barthel, OTR (Pediatric Track A)
Mary Hallway, OTR/L (Pediatric Track B)
Saturday, October 3 • 2:00 pm – 3:30 pm
Saturday, October 3 • 3:45 pm – 5:15 pm (Sessions Repeat)
These hands on laboratory experiences will focus on distal upper extremity control challenges in children with increased stiffness and decreased stiffness. (continued)
Didactic information and video vignettes will highlight the reach and prehension challenges experienced by children with different classifications of cerebral palsy. Each will be followed with demonstration and practice of specific intervention strategies to improve lower arm and hand function.

**OBJECTIVES:**
- Identify compensatory strategies typically observed in neurologically impaired children with increased stiffness
- Identify compensatory strategies typically observed in neurologically impaired children with decreased stiffness
- Describe a minimum of three new intervention treatment strategies to address distal upper extremity impairments
- Discuss clinical reasoning regarding the use of handling, objects and environment to enhance functional outcomes specific to treatment strategies demonstrated in the lab

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**SATURDAY ADULT TRACK**

**INTERCONNECTIONS BETWEEN THE ELBOW, FOREARM, WRIST AND HAND: THE ESSENTIALS OF DISTAL UPPER EXTREMITY AND HAND FUNCTION**

*Beth Tarduno, OTR/L*

Saturday, October 3 • 11:00 am – 12:30 pm

**STRATEGIES TO INCREASE UPPER EXTREMITY FUNCTION: FOCUS ON THE FOREARM, WRIST AND HAND**

*Beth Tarduno, OTR/L & Mechthild Rast, PhD, OTR/L*

Saturday, October 3 • 2:00 pm – 5:15 pm

The lecture and lab will focus on normal motor control and biomechanics of the distal upper extremity. Impairments typically encountered in adults with hemiplegia will be discussed in the context of their impact on functional abilities. Emphasis will be placed on the relationship among postural control, proximal upper extremity alignment and control, and distal upper extremity function. Learn to manage the forearm and hand, to maintain functional range in the wrist, to optimize the chance for pain-free wrist and hand movements, and to prevent or treat edema in the hand.

The morning lecture will set the foundation for the afternoon hands-on lab session that will address a variety of treatment strategies for improving functional use of the distal upper extremity.

**OBJECTIVES:**
- Describe normal biomechanics of the distal upper extremity and hand
- Identify normal motor patterns of the distal upper extremity and hand during functional tasks
- Explain the relationships among postural control, proximal upper extremity biomechanics and motor control, and distal upper extremity function
- Describe various system impairments that may interfere with distal upper extremity/hand function
- Apply a systematic problem solving approach to the treatment of the distal upper extremity
- Demonstrate several treatment strategies progressing from basic to increasingly complex functional movements for the impaired forearm, wrist, and hand

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**SUNDAY GENERAL SESSIONS**

**INTEGRATING NDT AND ADJUNCTS: HANDLING AND BEYOND**

*Audrey Yasukawa, MOT, OTR*

Saturday, October 3 • 8:15 am – 10:15 am

In today’s practice, therapists must intervene with the most appropriate intervention for children and young adults with abnormal muscle activity. Spasticity, muscle imbalance, and contracture are common clinical problems that impede the process of functional training in the pediatric patients with CNS dysfunction and musculoskeletal disorder. This session will examine upper extremity problems, criteria to evaluate candidates, and methods for maintaining results. The session will focus on providing the most appropriate therapeutic intervention to optimize alignment, including: Kinesio taping, splints/orthotics, cast, and EMG triggered stimulation. Discussion on the use of adjunctive treatment for the various diagnoses seen in the pediatric population and case presentation will be included.

**OBJECTIVES:**
- Identify the various adjunctive treatment options, risks and benefits of managing abnormal tone
- Discuss indications for casting, taping, EMG triggered stimulation, orthotics; including patient assessment and selection
- Design innovative programs for children and young adults with upper extremity impairments

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**CONTINUING EDUCATION CREDITS**

Continuing Education Credits have been applied for and will be available for attendance at the conference.
FROM NO HAND FUNCTION TO JUGGLING: CASE STUDY OF A MAN WITH HEMIPLEGIA
Mechthild Rast, PhD, OTR/L
Saturday, October 3 • 10:30 am – 11:30 am

This case study summarizes the course of occupational therapy with a middle aged man beginning shortly after his stroke. Initially the left arm and hand were non-functional. Therapy focused on identifying and addressing impairments in neuromuscular and musculoskeletal systems and on regaining skills contributing to performance patterns, especially roles important to the client. The client regained bilateral hand use including his pre-stroke leisure activity of juggling.

This presentation illustrates how NDT can be combined strategically with other treatment approaches and interventions to maximize functional recovery. The following issues will be included:

- The therapist’s ongoing attention to alignment and movement strategies during the client’s re-learning of motor control
- Problem-solving regarding intervention for wrist and shoulder pain
- Home exercise program
- Structuring and increasing the complexity of functional activities according to the client’s current abilities and interests
- Participation in activities important to the client

OBJECTIVES:

- Describe how a holistic, client-centered approach can guide the evaluation of body functions and structures, habits and roles, and performance areas of occupation
- Discuss clinical reasoning in the complex interaction between the hands-on treatment of motor skills and the therapeutic support of recovery in habits and roles, work, leisure and social participation

PANEL DISCUSSION: ANSWERING YOUR CLINICAL QUESTIONS
Moderator: Lezlie Adler, OTR/L
Panelists: Christine Cayo, Diane Fritts-Ryan, Mechthild Rast, Audrey Yasukawa
Saturday, October 3 • 11:30 am – 12:30 pm

During this final conference session, you will have the opportunity to address the key concepts that have emerged over the past few days. Come prepared to ask your questions of this diverse and expert panel. Take advantage of this integrative experience that will allow you to apply what you have learned upon returning to your work setting.
## SCHEDULE AT A GLANCE

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<td>Registration and Continental Breakfast</td>
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<td>8:30 am – 10:30 am</td>
<td>Neurobiology of Postural Control: Supporting Upper Extremity Function</td>
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<tr>
<td>10:30 am – 10:45 am</td>
<td>Break</td>
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<td>10:45 am – 12:15 pm</td>
<td>Concurrent Sessions</td>
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<td>Interconnections Between the Pelvis, Trunk &amp; Shoulder Girdle:</td>
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<td>The Essentials of Postural Control &amp; It's Influence on Upper Extremity</td>
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<td>• Pediatric Track: Lezlie Adler</td>
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<td>• Adult Track: Beth Tarduno</td>
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<td>12:15 pm – 1:45 pm</td>
<td>Lunch on Own</td>
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<td>1:45 pm – 3:15 pm</td>
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<td>Strategies to Increase Upper Extremity Function: Focus on the Interaction between Postural Control &amp; the Control of the Proximal Upper Extremity</td>
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<td>3:15 pm – 3:30 pm</td>
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<td>• Pediatric Track Repeats</td>
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<td>• Adult Track Continues</td>
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<td>5:00 pm – 6:00 pm</td>
<td>Wine &amp; Cheese Reception &amp; Exhibits</td>
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### SATURDAY, OCTOBER 3, 2009

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<td>8:00 am – 10:30 am</td>
<td>Sensory/Perceptual Contributions for Reach &amp; Prehension</td>
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<td>Gretchen Reeves</td>
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<td>10:30 am – 11:00 am</td>
<td>Break &amp; Exhibits</td>
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<td>11:00 am – 12:30 pm</td>
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<td>12:30 pm – 2:00 pm</td>
<td>Lunch &amp; Exhibits</td>
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<td>• Adult Track Continues</td>
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<td>5:15 pm – 6:15 pm</td>
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<tr>
<td>7:30 am – 8:00 am</td>
<td>Continental Breakfast</td>
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<tr>
<td>8:00 am – 8:15 am</td>
<td>NDTA Business Meeting</td>
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<tr>
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<td>Integrating NDT with Adjuncts: Handling &amp; Beyond</td>
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REGISTRATION FORM
NDTA 2009 SPECIALTY CONFERENCE
MERGING SCIENCE & PRACTICE: NDT TREATMENT OF UPPER EXTREMITY FUNCTION

Register today at www.ndta.org or return this form with full payment to:
Neuro-Developmental Treatment Association
1540 S. Coast Hwy, Suite 203 • Laguna Beach, CA 92651
(800) 869-9295 • Fax (949) 376-3456

ATTENDEE INFORMATION
First Name ____________________  Last Name ____________________________________________________
Member # ___________  Discipline:  ○ PT  ○ OT  ○ SLP  ○ Other ___________    Specialty:  ○ Pediatrics  ○ Adult Hemi
Company Name ______________________________________________________________________________________________
Address ____________________________________________________________________________________________________
City, State, Zip ______________________________________________________________________________________________
Telephone Number (        ) ____________________________________ Fax (         ) ____________________________________
Email Address ________________________________________ Website ______________________________________________
In case of Emergency call: ______________________________ Phone # ______________________________________________

NDTA 2009 SPECIALTY CONFERENCE REGISTRATION (please complete one registration form per person)

Description:  On or before 9/1/09 After 9/1/09 On-Site (Space permitting)
NDTA Member . . . . . . . . $399.00 . . . . . . . . $450.00 . . . . . . . . . $500.00 . . . . . . . . . $__________
NDTA Non-Member . . . . . $529.00 . . . . . . . . $580.00 . . . . . . . . . $610.00 . . . . . . . . . $__________

CONCURRENT SESSION SIGN-UP (REQUIRED)
Select the concurrent & lab sessions you will attend
☐ Pediatric Track
☐ Adult Track

Please assist us in planning by checking the applicable information:
☐ I will attend the Friday Wine & Cheese Reception
☐ I will attend the Saturday Lunch & Exhibits
☐ I have special needs, including dietary. Please contact me.

NDTA 2009 PAYMENT INFORMATION
☐ Check. Make Check Payable to NDTA: Check# ___________ Amount Paid $ ____________
☐ Visa    ☐ MasterCard    ☐ American Express
Credit Card# _____________________________________________________________________________ Exp. Date __________
Authorized Signature (required) ___________________________________________________________ Date _______________

Cancellation Policy: Full refund, less a $50 administrative fee, will be granted only if written cancellation notice is received by NDTA on or before September 1, 2009. No refund will be made for no-shows.
The Crowne Plaza Hotel is situated in downtown White Plains, NY, the heart of Westchester County. Only thirty minutes from Manhattan, the hotel is adjacent to world-class shopping at The Westchester Mall with restaurants and historic sites in the Hudson Valley nearby. Our host hotel features all non-smoking rooms, a fitness center, an indoor pool, cocktail lounge and Fenimore’s Bistro, serving breakfast, lunch and dinner. The hotel also has wireless high speed Internet access throughout the facility. This Westchester property offers a fleet of vans to transport guests to and from the Westchester County Airport, White Plains Metro North Train Station, and local businesses & attractions. The Crowne Plaza is offering NDTA guests special rates of $109, plus tax, single or double occupancy. We recommend that you make your reservations early. Reservations will be available until our group of rooms has sold out, which may be earlier than the cut-off date of September 10, 2009.

For ground transportation from New York Airports (La Guardia and JFK) contact Red Dot Airport Shuttle at 800-673-3368 and mention the pass code, NDTA, to receive the discounted rate of $49 per person, one-way.