Don’t Get Sunk – Just Use the Trunk: Innovative Aquatic Pediatric Strategies

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ATU Webinar
November 14, 2013

Introduction to Speaker

• Senior Physical Therapist, Lakeway Aquatic Therapy and Wellness Center, Austin, TX 2007 to Present
• Researcher and/or featured speaker at APTA CSM 2010, 2013,2014; WAHC 2010-11 & AOAP Conference 2012-2014

Course Objectives

1. Compare and contrast easy facilitation techniques for inhibiting spasticity and improving trunk control with children in the aquatic setting.

2. Given multiple choices, select appropriate aquatic exercises to improve coordination and mobility in children with sensory challenges.

3. Describe innovative uses of common pool equipment to engage children in aquatic therapy.

4. Make the best selection of new and dynamic aquatic treatment approaches for Torticollis and JIA.
Foundations of Gross Motor Control and Mobility

• Head Control
• Trunk and postural strength
• Tonal and reflexive movement management
• Sensory stimulation/inhibition/modulation
• Social, emotional and psychological influences

Head Control

Head Control w/ Dissociation
Trunk and Postural Strength

Utilizing Protective Reactions

• Sagittal plane facilitation

Utilizing Inclines

• Strengthen extension via downward inclination
Dynamic facilitation

- Quadruped skills – Facilitating dynamic UE weight-shifting

Lower Trunk Strengthening

- Neutral pelvis inhibits extension synergy recruitment

Lower Trunk Strengthening

- Dynamic floating devices
- Altered base of support

Adapted from: www.sprintaquatics.com
Tonal Synergistic Management

- Snaking techniques and Watsu

Tonal Inhibition Techniques

- Rotation w/ flexion
Tonal Inhibition Techniques

- Reciprocal inhibition

Sensory Pieces

- Stimulation

Adapted from: www.therapyjunction.net

Sensory Pieces

- Inhibition for low arousal

Adapted from: www.pinterest.com
Sensory Pieces

• Inhibition for high arousal

Adapted from: occupationaltherapyforchildren.over-blog.com

Sensory Pieces

• Increasing arousal levels via resisted trunk flexion
• Decreasing arousal levels via integrating Moro reflex

Adapted from: www.madonna.org

Sensory Pieces

• Modulation
Sensory Pieces

- Alternative methods – craniosacral therapy

Adapted from: www.aquatic4balance.com

Sensory Pieces

- Alternative Methods – “Water Dance”

Adapted from: www.craniosacralaquatic.com

The final piece...

- Breath control = Motor coordination

Adapted from: www.ywca.org
Motor Control

Integration
- Postural stability
- Postural control
- Vestibular Inputs
- Somatosensory Inputs

Adaptation

- Systems in balance

Adaptation
The rest of the story...

- Social, Emotional & Psychological Influences

Transitioning...the next phase

- Group aquatic activities

Case Study

Congenital Muscular Torticollis
Aquatic Treatment Approaches for CMT

- Muscular inhibition/activation
- Build the Foundation

Adapted from: www.vitalenergytherapy.com
Adapted from: www.concordekids.org

Case Study

Juvenile Idiopathic Arthritis

Aquatic Treatment Approaches for JIA

- Decrease joint loading
- Address ROM deficits more comfortably
- Increase cardio performance
- Nutrition

Adapted from: www.lrmc.com
Adapted from: www.cbayaquaticpt.com
Equipment

“Yuck-ee Medicine Ball” from: www.amazon.com

“Wunderboard” from: www.kiefer.com

“Mesh Raft” from: www.aquatictherapy.net

“Swim Island”

“Flotation devices”

Pediatric Aquatic PT Articles

• Vignochi, CM, et al. (Review Bras Fisioter; 2010). Effect of aquatic physical therapy on pain and state of deep and wide activity among stable newborns in hospital intensive care units. **
• Chrysagis, N, et al. (Biology of Exercise 2009). Effects of an aquatic program on gross motor function of children with spastic cerebral palsy. **
• Arndt, SW, et al. (Pediatric Physical Therapy 2008). Effects of neurodevelopmental treatment-based framework for infants with posture and movement dysfunction. **
• Yilmaz, I, et al. (Pediatric Internal Medicine 2004). Effects of swimming training on physical fitness and water orientation in autism. **

** Articles all retrieved from http://www.hookedonevidence.org.

References

• Ciaverelli, C. “Aquatic Physical Therapy’s Effect Upon Functional Head Control: A Retrospective Case Study.” APTA Combined Sections Meeting San Diego, CA; February 2010. Poster Presentation.
• Ciaverelli, C. and Ennis, E. “Effectiveness of Aquatic Physical Therapy As Primary Treatment Intervention for Exacerbation of Juvenile Idiopathic Arthritis.” APTA Combined Sections Meeting Las Vegas, NV; February 2014. Poster Presentation.
Online access:

- Links to download research discussed during webinar
- Links to articles discussed
- Link to order training manuals

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Innovative Aquatic Pediatric Strategies

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Thanks for attending, Carrie

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