PO Box 567 Kosrae, FSM 96944

# Partners In Movement LEVEL II: Integrating Kinesiological and Functional Models in Upright: Challenges for the child

### **Course Description:**

This course received high marks for the excellent review of the literature and the new long term planning perspective. The instructor reviews Level I principles on day one, then presents the kinesiology and muscle theory as it applies to movement of the child in upright. Day two covers the 'best of' recent research on assessment strategies for the older child. The long term planning lecture presents literature gems and clinical applications through case studies and working with families, caregivers and schools to impact practical carryover of ideas into everyday activities. The participants will particularly enjoy the family panel presenting powerful and unique perspectives on successful partnerships over 15 years and longer. Lectures and video case studies will allow participants to actively select treatment objectives and integrate strategies across multiple environments.

Course objectives: Upon completion of this course the participant will:

- 1. Understand the kinesiology behind the functional activities of children in upright.
- 2. Develop plans and services that cover the variety of environments young children may encounter daily.
- 3. Select and use evidence based models of evaluation and assessment as part of planning.
- 4. Create strategies that incorporate the child's developing gross and fine motor and communication skills.
- 5. Support potential partnerships among professionals and families.
- 6. Use consultation as part of the service delivery system.

DAY ONE:

- 8:00 REGISTRATION
- 8:30 INTRO/REVIEW: Functional Skills of the First Year: eyes, hands, mouth and movement
- 10:15 BREAK
- 10:30 KINESIOLOGICAL DEVELOPMENT IN UPRIGHT: Muscles, Motor Control and Upright Balance Strategies
- 11:30 Video observations and case study; Tasksheet #1
- 12:30 LUNCH
- 1:30 Discussion; Tasksheet #2
- 2:00 NONOPTIMAL KINESIOLOGY IN UPRIGHT: Effects on Function
- 3:00 BREAK
- 3:15 Treatment opportunities: This session will combine the mornings review and discussion of kinesiological considerations as functional activities and the environment are added as treatment challenges.
- 4:30 Finish

### DAY TWO

- 8:30 METHODS OF EVALUATION:
- 10:15 Break
- 10:30 **Tasksheet #3**
- 11:00 Case Study Tasksheet #4
- 12:30 LUNCH
- 1:30 Discussion
- 2:00 Long Term Planning: Tasksheet #5
- 3:00 Break
- 3:15 Family Forum: Long term planning
- 4:30 Finish

Kosrae, FSM 96944

Em ail: vickie@vickiemeade.com http://www.vickiemeade.com Telephone: (691) 370-8903

#### PLEASE WEAR COMFORTABLE CLOTHING

Bio:

Dr. Vickie Meade received her Doctoral Science Degree with a focus on screening infants using a two step process. Dr. Meade is a board certified clinical specialist in Pediatric Physical Therapy, with a Masters of Public Health in Maternal and Child Health. Dr. Meade is currently active in research on early screening and innovative service delivery models for infants, young children and their families on the island of Kosrae in Micronesia. Dr. Meade has been teaching courses related to early screening and intervention for over 20 years; as Adjunct Professor in the Masters of Physical Therapy Program at the College of St. Catherine, St. Paul, Minnesota, Seattle Pacific University, Seattle, Washington and internationally. Dr. Meade's publications include 'Partners in Movement: A family centered approach to pediatric kinesiology' and 'Handwriting: Anatomy of a Collaborative Assessment/Intervention Model' with Rhoda Erhardt; both available through Professional Development Products (www.pdppro.com).

PO Box 567 Kosrae, FSM 96944 Em ail: vickie@vickiem eade.com http://www.vickiem eade.com Telephone: (691) 370-8903

Tasksheet #1

PO Box 567 Kosrae, FSM 96944 Em ail: vickie@vickiem eade.com http://www.vickiem eade.com Telephone: (691) 370-8903

#### Tasksheet #2

Evaluation/Observation Task Sheet:You will have the opportunity to visually evaluate two to three young children in the upright position. The following activities are to guide you. For each child, observe if the child attempts the activity and note level of control or balance strategy that the child uses, alignment, and any issues of motor control such as motivation, interest, that may relate to what your are observing.

Name:	 	 
Age:	 	 
1. Sitting		
2. Crawling		
3. Standing		
4. Cruising		
5. Squatting		
6. Climbing		
7. Inclines		
8. Fast movement		
9. Ball Games		
Kick		
Throw		

PO Box 567 Kosrae, FSM 96944 Em ail: vickie@vickiem eade.com http://www.vickiem eade.com Telephone: (691) 370-8903

Tasksheet #3

PO Box 567 Kosrae, FSM 96944 Em ail: vickie@vickiem eade.com http://www.vickiem eade.com Telephone: (691) 370-8903

Tasksheet #6 EVAL/PLAN

PO Box 567 Kosrae, FSM 96944 Email: vickie@vickiemeade.com http://www.vickiemeade.com Telephone: (691) 370-8903

### Tasksheet #7 Activity #7 Long Term Planning Session

1.Do your perceptions of the child, as a team, match the parents perceptions?

- 2. In which category does your child fit: mild, moderate or severe?
- 3. Given the child's current age, how much do you anticipate the level of control will change?
- 4. How do you anticipate the parents involvement will change over the next several years?
- 5. What is your one year goal, given the child's age, degree of involvement, potential for change and parent involvement?
- 6. What is your five year and lifetime goals for this child?
- 7. Sequence activities to achieve your one year and five year goals, using the environment.

PO Box 567 Kosrae, FSM 96944

Course Evaluation

Em ail: vickie@vickiem eade.com http://www.vickiem eade.com Telephone: (691) 370-8903

PO Box 567 Kosrae, FSM 96944 Em ail: vickie@vickiem eade.com http://www.vickiem eade.com Telephone: (691) 370-8903

Materials

PO Box 567 Kosrae, FSM 96944 Email: vickie@vickiemeade.com http://www.vickiemeade.com Telephone: (691) 370-8903

References:

Horak, F: Postural Pertubations: New insights for treatment of balance disorders. Physical Therapy 77 (5): 517-533, 1997.

Montgomery, PC: Predicting Potential for Ambulation in children with Cerebral Palsy. Pediatric Physical Therapy 10:148-155, 1998

- Two studies with hypotonia- low n but none walked at all

- predicted that little reflex activity at 12 mo; sitting placed by 24 mo and all fours crawling by 30 mo predicted to ambulation.

Meade V.'Partners In Movement: A family Centered Approach to Pediatric Kinesiology. San Antonio, Texas: Therapy Skill Builders, 1998.

Development References:

Whitney MP and EB Thoman: Early sleep patterns of premature infants are differentially related to later developmental disabilities. Dev. And Behavioral Pediatrics 14 (20:71-80, 1993

Assessing and Treating Infants and Young Children with Severe Difficulties in Relating and Communicating. Zero to Three: National Center for Infants, Toddlers and Families, 1997

DeGangi G. Assessment of sensory, emotional, and attentional problems in regulatory disordered infants: Part I. Inf Young Children 3(3), 1-8, 1991.

DeGangi G., Craft P., Castellan J. Treatment of sensory, emotional, and attentional problems in regulatory disordered infants: Part 2. Inf Young Children 3(3), 9-19, 1991.

Hashimoto T., Hiura K., Endo S., Fukuda K., Mori A., Tayama M., Miyao M. Postural Effects on Behavioral States of Newborn Infants-A Sleep Polygraphic Study- Brain and Devel 5: 286-291, 1983.

Lombroso CT., Matsumiya Y. Stability in Waking-Sleep States in Neonates as a Predictor of Long-Term Neurologic Outcome. Pediatrics 76(1):52-63, 1985.

Judi Bierman's Fall 1986 Class. Components of Normal Movement: 13 months to 18 years. NDTA Newsletter May 1988. 13months to 18 years. Newsletter May 1988Excellent review of normal develop from an NDT perspective. Focused on balance of flex/ext and combination into rotation and functional activities. Focuses on activity of muscles, classifying eccentric contractions, where I would focus on elongation of the muscles in the age activity. Limits in range of motion of the hip knee at 13months, and at the ankle at eighteen months, with ROM full by 24 months.ÜÜHip (strategies) used at 13 months and ankle used at eighteen months. Gait not complete until 36 months.

Capute AJ., Shapiro BK., Palmer FB., Ross A., Wachtel RC. Normal Gross Motor Development: The Influences of Race, Sex and Socio-Economic Status Devel Med Child Neurol 27: 635-643, 1985.

Largo RH., Molinari L., Weber., Comenale Pinto L., Duc G., Early Development of Locomotion: Significance of Prematurity, Cerebral Palsy and Sex. Dev Med Child Neurol 27: 183-191, 1985.

Bottos M., Dalla Barba B., Stefani D., Pettena G., Tonin C., D'Este A. Locomotor Strategies Preceding Independent Walking: Prospective Study of Neurological and Language Development in 424 Cases. Dev Med Child Neurol 31: 25-34.1989.

#### Assessment References

Swanson, MW., Bennett, FC., Shy, KK., Whitfield, MF. Identification of Neurodevelopmental Abnormality at Four and Eight Months by the Movement Assessment of Infants. Dev Med Child Neurol 34: 321-337, 1992

Harris, SR. Movement Analysis- An aid to Early diagnosis of Cerebral Palsy. Phys Ther 71(3): 215-221, 1991. (Also in Movement Science Series Monograph)

PO Box 567 Kosrae, FSM 96944

#### Email: vickie@vickiemeade.com http://www.vickiemeade.com Telephone: (691) 370-8903

Boyce WF, Gowland C, Hardy S, Rosenbaum PL, Lane M, Plews N, Goldsmith C, Russell DJ. Development of a Qualityof-Movement measure for children with cerebral palsy. Phys Ther 71(11): 820-828, 1991.

Astbury J., Orgill A., Bajuk B., Yu V. Determinants of Developmental Performance of Very Low Birth Weight Survivors at one and two years of Age. Dev Med Child Neurol 25: 709-716, 1983.

McConnell, J: The Management of Chondromalacia Patellae: A Long Term Solution. The Australian Journal Of Physiotherapy 32(4), 1986.

Early Language and Development:

Silva, PA., McGee R., Williams SM. A Longitudinal Study of Children With Developmental Language Delay At Age Three: Later Intelligence, Reading and Behavior Problems. Dev Med Child Neurol 29: 630-640, 1987.

Bishop DVM., Edmundson A. Specific Language Impairment as A Maturational Lag: Evidence From Longitudinal Data On Language and Motor Development. Dev Med Child Neurol 29: 442-459, 1987.

Muscles and Motor Control:

Kendall FP, McCreary, EK, Provance, PG: Muscles Testing and Function.4th Ed. Williams and Wilkins, 1993

Kapandji, I.A. The Physiology of the Joints. Volume 1,2,3. Churchhill Livingston: New York, 1970.

Haas G., Diener HC., Rapp H., Dichgans J. Development of Feedback and Feedforward Control of Upright Stance. Dev Med Child Neurol 31:481-488, 1989.

Williams HG., Fisher JM., Tritschler KA. Descriptive Analysis of Static Postural Control in 4, 6, and 8 year old normal and motorically awkward children. Am J Phys Med 62: 12-26, 1983.

Shambles GM. Static Postural Control in Children. Am J Phys Med 55: 221-252, 1976.

Lefkof MB. Trunk Flexion in Healthy Children Aged 3 to 7 years. Phys. Ther 66:39-44, 1986.

Rose-Jacobs R. Development of Gait at Slow, Free and Fast Speeds in 3-and 5- Year-Old Children. Phys Ther 63(8): 1251-1259, 1983.

Tesh KM, Dunn JS, Evans JH. The Abdominal Muscles and Vertebral Stability. Spine 12(5):501-508, 1987.

Kluzik J, Fetters L, Coryell J. Quantification of Control: A Preliminary Study of Effects of Neurodevelopmental Treatment on Reaching in Children With Spastic Cerebral Palsy. Phys Ther 70(2):65-76, 1990.

SHOOL AGE CHILDREN:

Waber D., Mann M., Merola J. Motor Overflow and Attentional Processes in Normal School Age Children. Dev Med Child Neurol 27:491-497, 1985.

Gillberg CI. Children with Minor Neurodevelopmental Disorders.III: Neurological and Neurodevelopmental Problems At Age 10. Dev Med Child Neurol 27:3-16, 1985.

Gillberg CI, Gillberg C. Children with preschool minor neurodevelopmental disorders.IV: Behaviour and school achievement at age 13. Dev Med Child Neurol 31:3-13, 1989.

Gillberg CI, Gillberg C. Children with preschool minor neurodevelopmental disorders. V: Neurodevelopmental profiles at age 13. Dev Med Child Neurol 31:14-24, 1989.

Horak, F: Postural Pertubations: New insights for treatment of balance disorders. Physical Therapy 77 (5): 517-533, 1997. References:

Bernstein N: Coordination and Regulation of Movement. New York: Pergamon Press, 1967.

PO Box 567 Kosrae, FSM 96944

#### Em ail: vickie@vickiem eade.com http://www.vickiem eade.com Telephone: (691) 370-8903

Bishop DVM., Edmundson A. Specific Language Impairment as A Maturational Lag: Evidence From Longitudinal Data On Language and Motor Development. Dev Med Child Neurol 29: 442-459, 1987.

Burtner PA, Woollacott, MH, Qualls, C: Stance balance control with orthoses in a group of children with spastic cerebral palsy. Dev Med Child Neurol. 41:748-757, 1999.

Cusick, B.D., Stuberg, W.A. Assessment of Lower Extremity Alignment in the Transverse Plane: Implications in Children with Neuromotor Dysfunction. Physical Therapy 72(3): 3-15, 199

Davids JR, Bagley AM, Bryan M: Kinematic and kinetic analysis of running in children with cerebral palsy.Dev Med Child Neurol. 40: 528-535, 1998.

Dickson RA, Lawton JO, Archer, IA Buttt WP: The Pathogenesis of Idiopathic Scoliosis: J. Of Bone and Joint Surgery 1:8-15, 1984.

Forssberg, H Nashner, LM:Ontogenetic Development of Postural Control in Man: Adaptation to altered support and visual conditions during stance. J. Of Neuroscience 2 (5): 545-552, 1982

Herzia, CB. Implications of a Dynamical Systems Approach to Understanding Infant Kicking Behavior. Physical Therapy, 71(3), 54-67, 1991.

Hodges PW, Richardson CA: Contraction of the Abdominal Muscles associated with movement of the lower limb. Physical Therapy, 77 (2),132-144,1997.

Horak, F, Nashner L:Central programming of posture control: adaptation to altered support surface configurations. J of Neurophysiology 55: 1369-81, 1986.

Judi Bierman's Fall 1986 Class. Components of Normal Movement: 13 months to 18 years. NDTA Newsletter May 1988.

Lombroso CT., Matsumiya Y. Stability in Waking-Sleep States in Neonates as a Predictor of Long-Term Neurologic Outcome. Pediatrics 76(1):52-63, 1985.

Lin JP, Brown JK, Walsh EG: The Maturaltion of motor dexterity: or why Johnny can't go any faster Dev Med Child Neurol. 38:244-254, 1996.

Swanson, MW., Bennett, FC., Shy, KK., Whitfield, MF. Identification of Neurodevelopmental Abnormality at Four and Eight Months by the Movement Assessment of Infants. Dev Med Child Neurol 34: 321-337, 1994

Kendall FP, McCreary, EK, Provance, PG: Muscles Testing and Function.4th Ed. Williams and Wilkins, 1993

Kapandji, I.A. The Physiology of the Joints. Volume 1,2,3. Churchhill Livingston: New York, 1987.

Haas G., Diener HC., Rapp H., Dichgans J. Development of Feedback and Feedforward Control of Upright Stance. Dev Med Child Neurol 31:481-488, 1989.

Shumway-Cook A, Woollacot MH: The Growth of Stability: Postural control from a developmental perspective. J. Of Motor Behavior 17 (2): 131-147, 1985.

Tesh KM, Dunn JS, Evans JH. The Abdominal Muscles and Vertebral Stability. Spine 12(5):501-508, 1987.

Kluzik J, Fetters L, Coryell J. Quantification of Control: A Preliminary Study of Effects of Neurodevelopmental Treatment on Reaching in Children With Spastic Cerebral Palsy. Phys Ther 70(2):65-76, 1990.

Gillberg CI. Children with Minor Neurodevelopmental Disorders.III: Neurological and Neurodevelopmental Problems At Age 10. Dev Med Child Neurol 27:3-16, 1985.

Gillberg CI, Gillberg C. Children with preschool minor neurodevelopmental disorders.IV: Behaviour and school achievement at age 13. Dev Med Child Neurol 31:3-13, 1989.

PO Box 567 Kosrae, FSM 96944 Email: vickie@vickiemeade.com http://www.vickiemeade.com Telephone: (691) 370-8903

Gillberg CI, Gillberg C. Children with preschool minor neurodevelopmental disorders. V: Neurodevelopmental profiles at age 13. Dev Med Child Neurol 31:14-24, 1989.

Horak, F: Postural Pertubations: New insights for treatment of balance disorders. Physical Therapy 77 (5): 517-533, 1997.

Hadders-Algra, M, Touwen BCL: Minor Neurological Dysfunction is More closely Related to Learning Difficulties than to Behavioral Problems. Journal of Learning Disabilities 25 (10): 649-657, 1992.

Leonard, CT: Motor Behavior and Neural Changes Following Perinatal and Adult-Onset Brain Damage: Implications for Therapeutic Interventions. Physical Therapy 74 (8): 753-767, 1994

Piazza CC, Fisher WW, Kahng SW: Sleep patterns in children and young adults with mental retardation and severe behavioral disorders.Dev Med Child Neurol 1996.

Thelen, E.Cook, DW: Relationship Between newborn Stepping and Later Walking. An new Interpretation. Dev Med Child Neurol 29: 380-393, 1987

Waber D., Mann M., Merola J. Motor Overflow and Attentional Processes in Normal School Age Children. Dev Med Child Neurol 27:491-497, 1985.

Whitney MP and EB Thoman: Early sleep patterns of premature infants are differentially related to later developmental disabilities. Dev. And Behavioral Pediatrics 14 (20:71-80, 1993

Robertson, CMT, Grace, MGA: Validation of Prediction of Kindergarten-age School-readiness Scores of Nondisabled Survivors of Moderate neonatal Encephalopathy in Term Infants: Canadian Journal of Public health: volume 83 (supplement 2): S51-S57,1992.

Wheelwright EF, Minns RA, Law HT, Elton RA: Temporal and Spatial parameters of gait in children I: normal control data.Dev Med Child Neurol. 35: 102-113, 1993.

Wheelwright EF, Minns RA, Law HT, Elton RA: Temporal and Spatial parameters of gait in children II:pathological gait.Dev Med Child Neurol. 35: 114-125, 1993.

Williams HG., Fisher JM., Tritschler KA. Descriptive Analysis of Static Postural Control in 4, 6, and 8 year old normal and motorically awkward children. Am J Phys Med 62: 12-26, 1983.

Williams HG, Wollacott MH, Ivry R: Timing and Motor Control in Clumsy children. J of Motor Behavior 24(2), 165-172, 1992.

Williams LRT, Caswell P, Wagner I, Walmsley A, Handcock PJ: Regulation of standing posture. NZ J. Of Physiotherapy 15-18, 1984.