European School of Osteopathy

in association with

REHABILITATION PRAGUE SCHOOL

DYNAMIC NEUROMUSCULAR STABILIZATION

Basic Course A (3 days: 20 contact hours)

ESO, Maidstone, UK

October 1-3, 2010

Instructors: Prague school physiotherapists

Lucie Oplova, P.T. ***Petra Valouchova, P.T. Ph.D.***

COURSE DESCRIPTION

Etiology of back pain (or musculoskeletal pain) should be investigated not only from an anatomical and biomechanical standpoint, evaluating influence of external forces (i.e. loading) acting on the spine, but should also include evaluation of the internal forces induced by the patient's own musculature. The stabilizing function of muscles plays a critical and decisive postural role, which in turn is dependent upon the quality of CNS control. Any purposeful movement influences the global posture, and this posture subsequently influences the quality of the phasic movement. Activation of the (deep) stabilizers is automatic and subconscious, preceding every purposeful movement (the 'feed-forward mechanism'). The integrated stabilizing system of the spine consists of well balanced activity between deep neck flexors and spinal extensors in the cervical and upper thoracic region. Stability of the lower thoracic and lumbar region is dependent on the proportional activity between the diaphragm, pelvic floor, all the sections of the abdominal wall and spinal extensors. The

diaphragm, pelvic floor and abdominal wall regulate intra-abdominal pressure thus providing lumbopelvic postural stability. Under pathological conditions, insufficient postural function of the diaphragm, abnormal recruitment and timing between diaphragmatic and abdominal muscles activity, abnormal initial chest position (due to imbalanced activity between upper and lower chest fixators, with upper fixators dominating) and hyperactivity of the superficial spinal extensors can be observed. Kolar's approach to Dynamic Neuromuscular Stabilization (DNS) explains the importance of the relationship and proper recruitment of all muscular interactions for dynamic stability of the spine and utilizes a series of systematic dynamic tests. The DNS is a complex approach, encompassing principles of developmental kinesiology during the 1st year of the life, defining posture, breathing stereotype and functional joint centration from a "neurodevelopmental" paradigm. The treatment approach is based on reflex locomotion principles and ontogenetic postural locomotor patterns. The goal of this treatment approach is to optimize distribution of internal forces of the muscles acting on each segment of the spine and/or any other joint. In the DNS treatment concept, patient education is emphasized to restore ideal coordination among all stabilizing muscles. The DNS also involves assessment and treatment of cortical functions, a rather overlooked aspect in rehabilitation world.

Participants in this 3-day course will be introduced to these concepts with emphasis on early screening for abnormal development of babies with subsequent early intervention.

For further information on the approach, please visit www.rehabps.com

WHO SHOULD ATTEND

Physiatrists, Pediatricians, Neurologists, Residents, Physical Therapists, Physical Therapist Assistants, Occupational Therapists, Occupational Therapy Assistants, and Chiropractors

The DNS courses are based on neurophysiology, neuroanatomy, muscle physiology and kinesiology with an emphasis on diagnostics. This course is targeted towards licensed medical health professionals (MD, DO, PT, DC, OT). Non-medical health practitioners may be considered if they are able to show sufficient proof of educational background in the above areas, to the organizer. In addition, the organizer reserves the right to limit the audience to certain groups of professionals. Please check with the organizer.

COURSE OBJECTIVES

- Demonstrate an understanding of the basic principles of developmental kinesiology with an emphasis on development during the first year of life
- Describe the relationship between development during the first year of life and pathology of the movement system in adulthood.
- Demonstrate an understanding of new terminology such as functional joint centration, punctum fixum, punctum mobile and the integrated stabilizing system of the spine.

- Demonstrate an understanding of the most important principles of reflex locomotion: locomotor patterns - stepping and support function and stimulation zones
- Evaluate and correct poor respiratory patterns
- Assess the integrated stabilizing system of the spine both visually and utilizing dynamic functional tests.
- Perform the basic techniques for reflex locomotion, i.e. 1st phase of reflex turning, and reflex creeping: initial positioning and anticipated movements, key zones and their vectors.
- Integrate corrective exercises based on the DNS functional tests and developmental positions used in reflex locomotion. Clarify how DNS corrective exercises can integrate with other exercise strategies.
- Provide basic clinical management explanation for clinicians to better integrate the DNS approach in their regular practice, including patient education.
- To optimally prepare participants for the next level of training (Course "B")

AGENDA : TENTATIVE SCHEDULE

day1&2: 9.00 - 17.00
day 3: 9-00 - 15.00

Day 1
Morning:
Developmental Kinesiology, Ontogenesis – Basic Principles
Developmental Stages in the 1st year of life: Basic sagittal stabilization, locomotion function of the extremities, ipsilateral and contralateral patterns
Stabilization of Spine, Trunk and Pelvis in Sagittal Plane, Breathing
Stereotype (ideal and pathological models).
Afternoon:
The most important DNS tests, practice

Day 2
Morning:
Principles of reflex locomotion
1st phase of reflex turning - theory, demonstration & hands on workshop
Afternoon:
Reflex creeping - theory, demonstration & hands on workshop

Day 3
Morning:
Active DNS Exercise Based on Developmental & Reflex Locomotion Positions:
Basic theory, demonstration & hands on workshop
Afternoon:
DNS active exercise: hands on workshop

DNS CERTIFICATES

A Certificate of ATTENDANCE will be awarded by Prague School

OPTIONAL EXAMINATION

Participants who would like to participate in the educational track towards becoming a certified practitioner can take this exam for an additional fee of 50 Euros.
The test will consist of 50 multiple choice questions. Participants are required to return the test to the local instructor within a month after the course. Upon successful completion and passing of the test (80% and above), a Certificate of ACHIEVEMENT from Prague School of Rehabilitation will be awarded.

For more info about the DNS educational track please visit:
http://www.rehabps.com/REHABILITATION/Structure_course_A-D.html