Dynamic Neuromuscular Stabilization Presentation at SCA/LKR Conference in Sweden

Course dates:
January 31- February 2, 2014

Speakers:
Alena Kobesova, MD, PhD
Marcela Safarova, MPT, PhD
Julie Demekova, MPT
Jesper Andersen, DC

Location:
Grand Hotel
Bantorget 1
Lund, Sweden

Seminar Schedule

Friday January 31st, 2014: LECTURES
13:00-13:30 Registration
13:30-15:00 Alena Kobesova, MD, PhD: Introduction to Dynamic Neuromuscular Stabilization: Developmental Kinesiology approach.
15:30-17:30 Alena Kobesova, MD, PhD: Dynamic Neuromuscular Stabilization: Three levels of motor control
17.30-18.30: Marcela Safárova, MPT, PhD: Video Case Reports: DNS assessment and treatment of patients with musculoskeletal pain
19:00- Afterwork buffè
Saturday February 1st, 2014: WORKSHOPS

DNS workshops: Alena Kobesova, MD, PhD, Marcela Safarova, MPT, PhD, Julie Demekova, MPT, Jesper Andersen, DC
08:30-10:00 DNS workshop: Functional tests to analyze postural stabilization
10:00-10:30 Break
10:30-12:00 DNS workshop: Analysis of postural-locomotion function, strategy of treatment based on the DNS tests
12:00-13:00 Lunch
13:00-14:30 DNS workshop: Exercise based on functional analysis, strategy for patient’s self-treatment
14:30-15:00 Break
15:00-19:00 SCA Annual Meeting
20:00: Gala Dinner

Sunday February 2nd, 2014: LECTURES
08:30-10:30 Marcela Safarova, MPT, PhD: DNS principles in functional assessment and treatment in infants and children
10:30-11:00 Break
11:00-12:30 Alena Kobesova, MD, PhD: DNS strategy for torticollis – case report
  Marcela Safarova, MPT, PhD: DNS strategy for cerebral palsy – case report
  Alena Kobesova, MD, PhD: DNS strategy for developmental dyspraxia – case report
  Marcela Safarova, MPT, PhD: DNS strategy for idiopathic scoliosis – case report
(Case reports maybe modified depending on specific interest from the organizer and video material available)

DNS lectures and workshops 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 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.

**The lecture and the workshop will cover the following:**

- The basic principles of developmental kinesiology.
- Development during the first year of life: stabilization of the spine in the sagittal plane, definition of ideal stereotype of breathing and functional joint centration, development of the phasic movements coupled with trunk rotation
- The relationship between infant neuromaturation and adult locomotor system pathology.
- Functional stabilization of the spine. Posture is addressed from a developmental perspective.
- Correction of poor stereotypes of respiration.
- Definition and importance of cortical functions

**During the workshops, the following will be demonstrated:**

- Skills to utilize the most important tests to evaluate the postural-locomotion function.
- Skills for evaluation of breathing stereotypes.
- The most important techniques used in treatment of postural stabilization utilizing the principles of postural ontogenesis
- Self-treatment techniques based on developmental principles
- Assessment and re-education of the cortical functions.

**The above knowledge and skills can clinically be utilized in:**

- Treatment of functional pathology of the locomotor system, vertebrogenic and radicular pain syndromes where the stabilizing system of the spine plays a crucial role.
- Treatment of functional pathology of the locomotor system resulting from poor early development.
- Treatment of many neurological and pediatric diagnoses like CP, poor posture, scoliosis etc.

**DNS Instructors**

**Alena Kobesova, M.D. Ph.D.**

Dr. Kobesova is a neurologist and physiatrist at the Rehabilitation Department, University Hospital Motol, 2nd School of Medicine, Charles University, Prague, Czech Republic.

Dr. Kobesova is the Assistant Academic Director of the Rehabilitation Clinic, the 2nd Medical School and also the Physiotherapy School, Charles University, Prague. She is an instructor of neurology and also of physical/manual medicine and rehabilitation. Dr. Kobesova organizes and teaches courses for international groups of clinicians who travel to the Czech Republic to study the “Prague School” methods, especially Dynamic Neuromuscular Stabilization approach. She also administrates website presenting Prague School of Rehabilitation ([www.rehabps.com](http://www.rehabps.com)).
Dr. Kobesova is a certified instructor in Manual Medicine in the Czech Republic. She has studied extensively with Professor Karel Lewit, an international authority in manual medicine for more than 5 decades and the founder of the internationally renowned “Prague School of Manual Medicine & Rehabilitation”. In conjunction with Professor Lewit, she has produced a seven-volume instruction video demonstrating “Prague School” therapeutic soft tissue mobilization and relaxation techniques. Dr. Kobesova successfully completed the Czech Reflex Locomotion Training Course, which covers the theoretical and practical methods of the founder of Reflex Locomotion, Professor Vaclav Vojta. Dr. Kobesova has instructed physical/manual medicine and rehabilitation courses on four continents, including Dynamic Neuromuscular Stabilization (DNS) according to Kolar.

Specializing in the treatment of patients suffering from various neurological disorders, Dr. Kobesova is a member of interdisciplinary team, which cares for patients suffering from hereditary motor and sensory neuropathy (HMSN - Charcot Marie Tooth). She has published several clinical articles in the Czech and international journals regarding HMSN, in addition to papers on other topics related to rehabilitation. In 2009 Alena Kobesova successfully completed her Ph.D. Her thesis was: "Stability disturbances in patients with hereditary motor and sensory neuropathy".

Dr. Kobesova currently serves as scientific secretary of Czech Society of Myoskeletal Medicine following her appointment in 2008. In 2009 Dr. Kobesova accepted an appointment as Adjunct Senior Lecturer in the Faculty of Health Sciences, Murdoch University, Australia.

**Marcela Safarova, MPT, Ph.D.**

Marcela Safarova serves as head physiotherapist at Clinic of Rehabilitation ad Sports Medicine, Faculty Hospital Motol, Prague, Czech Republic. She coordinates the teams of physiotherapist for children and adult parts of the clinic and also organizes physiotherapist’s continuous education program. Mrs. Safarova has been involved in the international instruction program of Prague School myoskeletal techniques including Dynamic Neuromuscular Stabilization according to Kolar (DNS) since 2003. She has completed a 6-week course in Manual Medicine under Prof. Lewit and an Instructor’s course in “Manual Techniques according to Lewit” thus being certified instructors in Manual Medicine in the Czech Republic. Marcela Safarova has also completed an 8-week course in Reflex Locomotion according to Vojta to become certified Reflex Locomotion practitioners. And has been working towards certified Vojta Instructor. MsC. Safarova is involved in research projects studying the clinical effect of the DNS in scoliotic patients and in children and adolescent who are long term survivors of Wilm’s tumor having postural problems. She has completed her Ph.D in 2009, defending successfully her thesis on: Musculoskeletal System Dysfunction in Patients in Long-Term Remission of Wilms Nephroblastoma.

MSc. Safarova has over 10 years of clinical experience studying from and working with Assistant Professor Pavel Kolar, becoming highly skilled in his techniques. She is a full-time, active staff member of the Rehabilitation Clinic, University Hospital Motol, 2nd Medical Faculty, Charles University in Prague, where Professor Kolar serves as the head of the Rehabilitation Clinic and also of the Physiotherapy School. She serves as instructor in rehabilitation to both medical and physiotherapy students at Charles University. Marcela Safarova has instructed
the concept of Dynamic Neuromuscular Stabilization in various European countries, in the US, Australia and Japan.

**Júlia Demeková, MPT**

Ms. Demekova has been working as a physiotherapist at the Rehabilitation Clinic, University Hospital Motol, 2nd School of Medicine, Charles University, Prague, Czech Republic. She also acts as a lecturer at Charles University, 2nd School of Medicine teaching physical therapy to both students of physiotherapy undergraduate program and medical students.

Julie Demekova achieved Master’s Degree in Physiotherapy in 2007, Palacky University, Olomouc, Czech Republic. In 2006 she completed a course in Reflex Locomotion according to Vojta focusing on the treatment of adult patients. She has worked in the ‘Lipová the Spa’ at the out-patient unit focusing on treatment of overweight patients, coordinating the organization of the controlled movement therapy and dietetic restrictions. In 2006-2009 she acted as assisting instructor in Manual Medicine Courses.

Since 2009 Julie Demekova works as a full-time active member of the rehabilitation stuff at the Rehabilitation clinic, University Hospital Motol in Prague, achieving an extensive experience with functional assessment and treatment of patients with various types of neurological, musculoskeletal and orthopedic diagnoses, and also with pediatric clients. She works at both in- and out-patient departments at the Motol rehabilitation Clinic as well as at the Spinal Unit and Pain Management Center.

Julie Demekova closely works under Professors Pavel Kolar’s supervision, becoming an expert in the Dynamic Neuromuscular Stabilization approach. Ms. Demekova acts as an instructor in Dynamic Neuromuscular Stabilization since 2010. She has been teaching the DNS courses in Czech Republic, Slovakia and other European countries and in North America.

**Jesper V. Andersen, D.C.**

Chiropractor Jesper Villekold Andersen from Denmark is in private practice. He Graduated from Anglo European College of Chiropractic in 1990.

From the mid 90’s he studied several times with Prof. Karel Lewit from Prague. Amongst many things, the fact that active scar tissue and restricted Fascia must never be underestimate was the most important expertise gained. This was not part of the former Chiropractic training and including therapy for these ”key links” into the ”toolbox” made a great improvement in managing a section of the chronic patients.

Jesper V. Andersen DC. Began his studies with Prof. Pavel Kolar in 2000. He has since that time spend time in Prague every year studying Dynamic Neuromuscular Stabilization (DNS). The approach of DNS to the locomotor system has opened a whole new dimension in patient care. It’s now possible to influence the pain generating movement patterns specifically both in reflex way and then reinforce them voluntarily. Jesper V. Andersen has arranged Postgraduate courses in Denmark and Prague with the help from Alena Kobesova MD. He was certified DNS instructor in 2007.

Private practice: RygCenter Skjern, Bredgade 38,2.sal, DK-6900 Skjern, Denm
Author of the DNS concept: Prof. Pavel Kolar, PaedDr., Ph.D.

Professor Kolar is a physiotherapist by training. His instructors, Professor Karel Lewit and the late Professors Vaclav Vojte and Vladimir Janda, profoundly influenced him in his approach. He is the Director of the Rehabilitation Department, University Hospital Motol, School of Medicine, Charles University, Prague, Czech Republic. This is the largest hospital in Central Europe. Prof. Kolar acts as a Vice-Dean for Bachelor and Master level study at 2nd Medical faculty, Charles University in Prague and also as an adviser to the Director of the Hospital. As Director of the Rehabilitation Department, Professor Kolar oversees the following: The Rehabilitation Unit for adult patients, both outpatients and in-patients The Rehabilitation Unit for children The Pain Management Unit: outpatient and inpatient. The Spinal Cord Unit The School of Physiotherapy

Professor Kolar is renowned for his work in rehabilitation, in addition to his treatment of celebrities in the world of sports, politics and entertainment. He has been appointed team clinician for the Czech Olympic teams, Davis Cup tennis teams and national ice hockey teams. He gained wide recognition for his treatment of former Czech President Vaclav Havel, which included traveling the President’s personal clinician when he went abroad. Because of the profound influence of DNS to rehabilitation in the Czech Republic, Professor Kolar was awarded the prestigious "Presidential Award for Professional Excellence" by Czech President Vaclav Klaus in 2007.

Professor Kolar is currently directing an extensive research project in his department concerning developmental kinesiology and its application in early diagnosis of central nervous system disorder in newborns and infants. Using developmental kinesiology in the treatment of newborns and infants with cerebral palsy. Professor Kolar is also currently involved in a second research project, studying postural activity of the diaphragm and conservative treatment of radicular pain syndromes. In 2009 Pavel Kolar successfully completed his Ph.D. His thesis was: “Dynamic MRI and spirometric analysis of diaphragmatic activity.

Professor Kolar is also a member of interdisciplinary team at the Orthopedic Unit at the hospital. This concerns evaluation of children suffering from cerebral palsy and poor posture resulting in orthopedic deformities and indications for surgical treatment. His work is highly appreciated by orthopedists, who consider his opinion to be very important for surgical indications.

Professor Kolar has taught his methods in Europe, North America, Asia and Australia. In 2009 Dr. Kolar accepted an appointment as Adjunct Senior Lecturer in the Faculty of Health Sciences, Murdoch University, Australia.