

FUNCTIONAL NEUROMUSCULAR REHABILITATION WORKSHOP

DR. EYAL LEDERMAN, DO, PhD

OVERVIEW

This three-day course explores the natural processes underlying neuromuscular recovery and how they can be applied clinically to improve the control of movement after musculoskeletal injury, pain conditions and CNS damage.

In this course the participants will be introduced to a functional-behavioral approach in which the individual's own movement repertoire is used for rehabilitation and to recover functionality. It explores how familiar daily activities can be amplified to provide the necessary challenges to recover motor control.

The course will move away from models of rehabilitation that promote movement fragmentation and approaches that have little resemblance to normal human movement, such as gym-based exercise, muscle-by-muscle and muscle chains rehabilitation, core training and dynamic stabilization.

During the course, the participants will learn to assess and identify the particular motor losses and develop specific strategies to help motor recovery. The practical aspect of the course will include hands-on manual approaches as well as specific challenges / exercise and self-care strategies to regain and improve control of movement and functionality.

COURSE PREVIEW VIDEO: <https://www.youtube.com/watch?v=e8ir14-V-vs>

TOPICS:

- Motor control and motor learning principles
- Role of proprioception in movement
- Training principles for sports and movement performance
- The motor system in injury, pain and central nervous system damage
- Rehabilitation of movement control after joint and muscle injuries
- Rehabilitation of movement control post-surgery
- Neuromuscular rehabilitation for patients with central nervous system damage (stroke, MS, head injuries)
- Pain and the motor system
- Psychological factors and motor control
- Cognitions and behavior in managing movement recovery
- Self-care strategies for the patient
- Exercise prescription

Developing a neuromuscular rehabilitation programme:

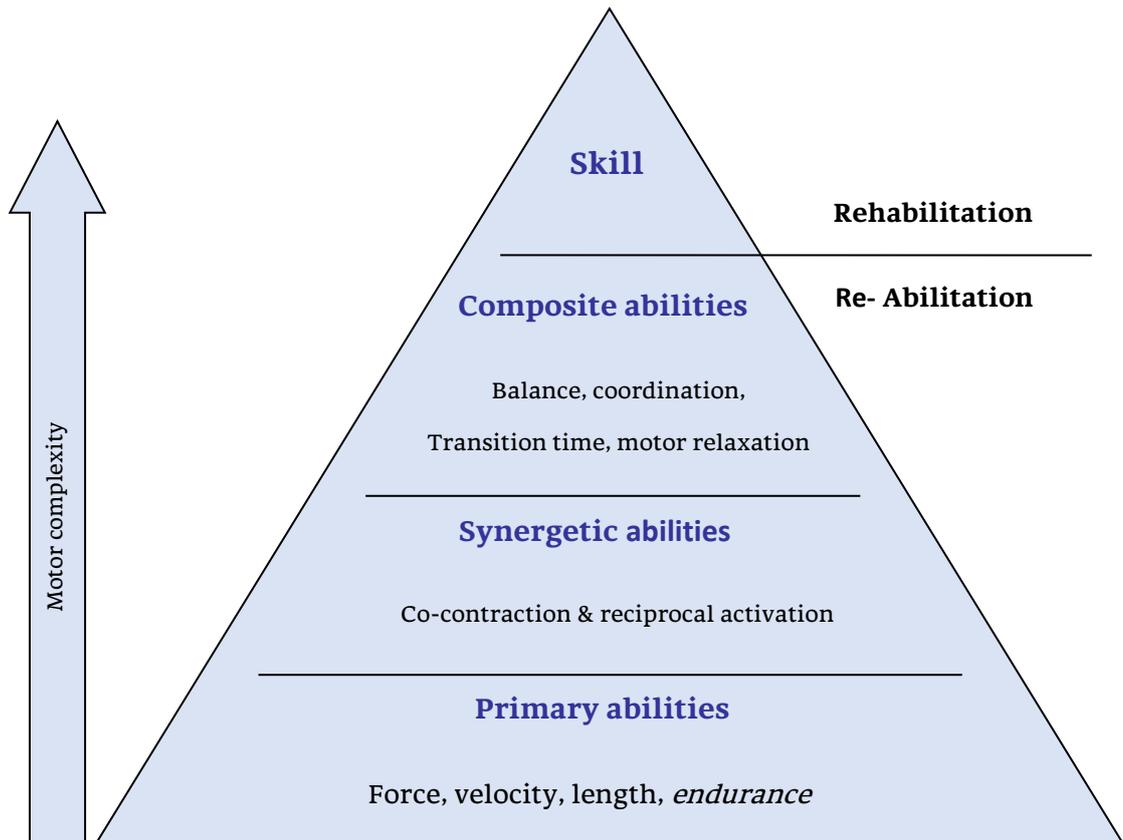
Much of the rehabilitation promoted in this workshop is the marrying of the three concepts:

1. The focus on functional movement
2. The principle of skill/ability level rehabilitation
3. The code for motor adaptation.

Through a simple three steps process the therapist decides which level of rehabilitation will be used and applies the motor adaptation elements to the treatment programme. Many of the remedial challenges are selected from the patient's own movement repertoire. It really is that simple.

These principles can be applied to any condition in which the neuromuscular system is implicated:

- **Conditions with an intact motor system:**
 - Neuromuscular changes associated with musculoskeletal injuries, sports injuries, post-surgery, back pain and other musculoskeletal pain conditions.
 - Conditions where certain behaviours impede recovery or may lead to injury or pain.
 - Non-traumatic pain conditions such as trapezius myalgia, chronic neck pain and painful jaw.
- **Conditions where there is damage to the central nervous system (CNS):**
 - Stroke, head trauma and post CNS surgery.



Summary

- Neuromuscular rehabilitation aims to help the individual recover their movement control.
- Functional movement is the movement repertoire of an individual.
- Functional movement is individual-specific.
- Functional rehabilitation uses the patient's own movement repertoire to help them recover their movement losses.
- The rehabilitation promoted in this course has three basic recurring concepts:
 1. It aims to be functional
 2. It uses the skill/ability level rehabilitation concept
 3. It uses the learning/adaptation code to optimise motor control changes

ABOUT DR. EYAL LEDERMAN

Dr. Eyal Lederman DO, PhD has been practicing osteopathy since 1986. He has held a post of Visiting Professor (osteopathy) and is currently an Honorary Senior Lecturer at University College London (UCL), Orthopedics and Musculoskeletal Health. He has a doctorate (PhD) in physiotherapy (1998).

Dr. Lederman is involved in researching and teaching the scientific basis of osteopathy and other forms of manual and physical therapies. His ongoing involvement in research has led to the development of new treatment approaches. He is internationally known as an expert in his field and has been teaching clinical skills to osteopaths and physiotherapists worldwide.

Dr. Lederman is the author of the books *Harmonic Technique*, *Fundamentals of Manual Therapy*, *The Science and Practice of Manual Therapy*, *Neuromuscular Rehabilitation in Manual and Physical Therapies* and *Therapeutic Stretching*.

