



FIMM Education Committee

**Syllabus for the Basic Course in Manual Medicine
Modified in Puigcerda 1999, Ålborg and Chicago 2001
Modified in St. Goar 2005**

**2nd Edition
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Syllabus for the Core Curriculum for Manual Medicine – modified in Puigcerda 1999, Ålborg 2001, and St. Goar 2005 by the FIMM Education Committee; ratified by the FIMM General Assembly in Chicago 2001; accepted as a Core Document by the Executive Board of the FIMM International Academy of Manual Musculoskeletal Medicine 2005

Introduction

Manual/musculoskeletal medicine is a branch of medical science concerned with the functions and disorders of the musculoskeletal systems, including the muscles, aponeuroses, joints and bones of the axial and appendicular skeleton and those parts of the nervous or visceral systems associated with them.

The object of this syllabus is to provide an educational core outlining the distinctive cognitive, psychomotor, and affective elements involved in the training of a physician aspiring to practice manual/musculoskeletal medicine in a safe and effective manner.

This syllabus is a document proposed by educationalists making up the FIMM Education Committee *[and ratified by representatives at the General Assembly in London September 9th, 2005 the national member organizations making up FIMM]*. The syllabus is divided into the following sections:

- A Basic knowledge
- B Basic sciences and functional anatomy
- C Examination and investigations
- D Therapeutics and prevention
- E Basic core curriculum structure and delivery

CORE CURRICULUM FOR MANUAL MEDICINE (CORE OF MUSCULOSKELETAL MEDICINE)

A. BASIC KNOWLEDGE

To supplement the education of the complete physician

A.1 Essential knowledge of:

- A.1.1 Functional anatomy and biomechanics of the musculoskeletal system.
- A.1.2 Physiology and pathophysiology of the musculoskeletal system.
- A.1.3 Anatomy, physiology and pathophysiology of the nervous system in relation to pain and dysfunction.
- A.1.4 Postulated mechanisms of manual medicine diagnostic and therapeutic techniques.
- A.1.5 Clinical syndromes and differential diagnostics of the neuromusculoskeletal system (International Classification of Disease [ICD] diagnostics or its equivalent).
- A.1.6 Relevant ancillary diagnostics (e.g. laboratory, imaging, electrodiagnostics) to manual medicine/musculoskeletal medicine.
- A.1.7 The risks and benefits of other relevant therapeutic modalities compared to or in conjunction with manual medicine.
- A.1.8 Indications and contraindications for different therapeutic options.

A.2 Essential affective behaviour characterized by:

- A.2.1 Conducting the interview, examination and subsequent treatment in a way that demonstrates a holistic understanding of the patient and his/her problem in an ethical, caring manner.
- A.2.2 Maintaining respectful and collegial professional relationships that promote the understanding and advancement of M/M medicine.

A.3 Essential skills in:

- A.3.1 Applying the essential affective, cognitive, and psychomotor skills to conduct effective anamnesis and physical examination.
- A.3.2 Applying essential affective, cognitive, and psychomotor skills to conduct effective, accurate palpatory diagnosis.
- A.3.3 Applying essential knowledge and behaviour to deliver safe, effective manual medicine treatment.

B. BASIC SCIENCES

Functional anatomy, neurophysiology, physiology and biomechanics of the neuromusculoskeletal system

B.1 Introduction

- B.1.1 The objective of this part of the syllabus is to outline the essential elements of anatomy, biomechanics, and pathophysiology on which the clinical disciplines depend.
- B.1.2 M/M medicine physicians combine core knowledge of musculoskeletal science with a practical ability to integrate this knowledge with particular clinical skills, and to orchestrate a comprehensive approach to the diagnosis and treatment of patients with disorders of the musculoskeletal system.

B.2 Anatomy objectives

- B.2.1 General anatomy objectives: To attain a knowledge to satisfy objectives of the FIMM core curriculum of anatomy appropriate and sufficient to:
 - B.2.1.1 Comprehend and describe the normal functions of the muscles and joints of the axial and appendicular skeleton, and the function of the nervous system as it pertains to the musculoskeletal function;
 - B.2.1.2 Comprehend the aberrations of function of the neuromusculoskeletal systems;

- B.2.1.3 Understand the anatomical basis of techniques used to investigate and manage neuromusculoskeletal complaints;
 - B.2.1.4 Evaluate critically the established and new theories on the pathogenesis, mechanisms and management of neuromusculoskeletal complaints.
- B.2.2 Specific anatomy objectives:
- B.2.2.1 Describe macrostructure, anatomical relations and surface anatomy of the elements of the musculoskeletal system/locomotor system, including:
 - B.2.2.1.1 bones
 - B.2.2.1.2 joints
 - B.2.2.1.3 intra-articular inclusions
 - B.2.2.1.4 bursae
 - B.2.2.1.5 ligaments
 - B.2.2.1.6 muscles
 - B.2.2.1.7 tendons
 - B.2.2.1.8 entheses
 - B.2.2.1.9 fasciae
 - B.2.2.1.10 nerves
 - B.2.2.2 Describe the attachments and actions of muscles related to the main musculoskeletal syndromes.
 - B.2.2.3 State the peripheral and segmental nerve supply of muscles and joints related to the main musculoskeletal syndromes.
 - B.2.2.4 Describe and demonstrate the course and distribution of the peripheral and autonomic nerves in a detail appropriate to:
 - B.2.2.4.1 the interpretation of musculoskeletal complaints;
 - B.2.2.4.2 the comprehension of investigations involving these nerves as they pertain to musculoskeletal complaints.
 - B.2.2.5 Describe the course and relation of the peripheral arteries (especially the vertebral arteries) and the effects on these vessels of movements of the associated skeletal structures.
 - B.2.2.6 Describe the disposition and attachments of all the structures within the vertebral canal, and the effects on these structures of movements of the vertebral column, head and limbs.
 - B.2.2.7 Describe the basic neuroanatomy to explaining the motor and sensory mechanisms involved in movements and musculoskeletal complaints.

B.3 Physiology objectives

- B.3.1 General physiology objective: To understand the physiological basis of the functions and disorders of the neuromusculoskeletal system.

- B.3.2 Specific physiology objectives:
 - B.3.2.1 Describe the basic metabolic principles and physiology of bone, muscle, connective tissue and nerves pertaining to the neuromusculoskeletal system.
 - B.3.2.2 Describe the molecular and cellular processes implicated in mechanisms of muscle contraction.
 - B.3.2.3 Describe different types of muscular fibres.
 - B.3.2.4 Describe muscle adaptability.
 - B.3.2.5 Describe the effects of rest, exercise and ageing on skeletal muscle, in terms of histochemistry and molecular structure.
 - B.3.2.6 Describe the molecular and cellular processes involved in:
 - B.3.2.6.1 the generation and propagation of action potentials in nerve and muscles;
 - B.3.2.6.2 excitatory and inhibitory synapses.
 - B.3.2.7 Describe the neurophysiology, activity and function of reflexes involving the musculoskeletal system including somatovisceral, viscerosomatic, and somatosomatic relationships.
 - B.3.2.8 Describe the basic motor and sensory neurophysiological mechanisms in sufficient detail to interpret and explain the symptoms and signs of disorders of the locomotor system.

B.4 Biomechanics objectives

- B.4.1 General biomechanics objective: To understand certain precepts of biomechanics and apply them to the musculoskeletal system.
- B.4.2 Specific biomechanics objectives:
 - B.4.2.1 Demonstrate an ability to apply and interpret the following terms with respect to any of the tissues of the musculoskeletal system:
 - B.4.2.1.1 stress
 - B.4.2.1.2 strain
 - B.4.2.1.3 stiffness
 - B.4.2.1.4 toughness
 - B.4.2.1.5 viscoelasticity
 - B.4.2.1.6 creep
 - B.4.2.1.7 hysteresis
 - B.4.2.1.8 fatigue failure
 - B.4.2.2 Describe the movement of any joint in terms of translation and rotation around biomechanical axes.
 - B.4.2.3 Define, in biomechanical terms, the following terms as they are applied to joints:
 - B.4.2.3.1 hypomobility
 - B.4.2.3.2 hypermobility
 - B.4.2.3.3 instability
 - B.4.2.4 Describe biomechanical differences between capsular and somatic dysfunction patterns.
 - B.4.2.5 Demonstrate an ability to apply precepts of biomechanics to:

- B.4.2.5.1 clinical features
- B.4.2.5.2 posture
- B.4.2.5.3 the gait cycle
- B.4.2.5.4 activities of daily living, including occupational and recreational activities

B.5 Pain objectives

- B.5.1 General pain objective: To understand the somatic and visceral structures which contain receptors capable of creating pain, the physiology of pain and the pathophysiologic and biopsychosocial implications of pain.
- B.5.2 Specific pain objectives:
 - B.5.2.1 To describe the taxonomy of pain.
 - B.5.2.2 To describe the anatomy, physiology, pathophysiology, and proposed mechanisms of pain.
 - B.5.2.3 To differentiate acute and chronic pain and their proposed mechanisms.
 - B.5.2.4 To describe the relationship between psychosocial factors and chronic pain.
 - B.5.2.5 To describe the role of the autonomic nervous system in relation to pain.

B.6 Natural history and epidemiology of representative clinical conditions in M/M medicine

B.7 Evidence-based M/M medicine

Many diagnostic procedures have been developed in the different schools in M/M medicine over the past decades. In the vast majority, the reproducibility of these tests is lacking. Up to now many therapeutic and diagnostic approaches are rather based on historical traditions than on solid research. For many tests, the question arises if they really test what they are supposed to test. It illustrates the absence of the validity of these tests. Before performing all kinds of validity studies, the most important task for M/M medicine is first to make their diagnostic tests reproducible. It is the task of scientists of the different schools to perform reproducibility, validity, specificity and sensitivity studies. Having defined specific groups, efficacy studies can be done, in the first place pragmatic studies, if more defined fastidious studies. For practitioners in M/M medicine reproducibility studies are easy and cheap to perform. Both individual clinical experience and external clinical evidence are essential for the medical practitioner.

The primary goal of EBM is to provide the medical practitioner, in combination with his clinical expertise, with the best tools for decision making about the care of the individual patient. Doctors integrating EBM will identify and apply the most efficacious therapies

and choose the best-validated diagnostics, to maximize the well-being of their individual patients. Using EBM in M/M medicine in the right way will lead to further development of the M/M profession. Validated diagnostic procedures become interchangeable between the different schools in M/M medicine. Efficacy trials based on homogeneous populations become mutually comparable. Good doctors in M/M medicine will use both their indispensable expertise and the best available scientific evidence of that moment, to provide their patients with the best care – evidence-based medicine.

C. DIAGNOSTIC EXAMINATION

- C.1** Diagnosis in M/M medicine is based first on a conventional medical examination, secondly on a manual examination.
 - C.1.1** A conventional medical examination is required to understand the condition of the patient with respect to indications, contraindications and therapeutic options. In manual diagnosis (e.g. spinal, muscular, regional) of dysfunction it is required to designate the site and appropriate form of manual medicine treatment.
 - C.1.2** Functional and pathologic abnormalities often coexist. In manual medicine, both structural and functional disturbances are identified to reach a diagnosis.
- C.2** The examination is divided into a screening, a scanning, and appropriate local examinations. Diagnosis requires careful interpretation of these findings integrated with history, physical and ancillary tests.
 - C.2.1** The screening examination asks the question: Is there a problem in the musculoskeletal system that deserves additional evaluation?
 - C.2.1.1** Conduct a thorough history and examination with emphasis on biomechanical, occupational, orthopedic, neurological, biopsychosocial factors.
 - C.2.1.2** Inspect posture.
 - C.2.1.3** Inspect gait.
 - C.2.1.4** Inspect gross ranges of motion.
 - C.2.2** The scanning examination asks the question: What region and what tissues within the region are dysfunctional and of relevance?
 - C.2.2.1** Conduct orthopedic, neurological, systemic and ancillary tests using methods to provide “physician-level” understanding of the patient’s pathophysiological and structural condition pertaining to the tissue in question.
 - C.2.2.2** Conduct a palpatory examination of the region or tissue to identify the specific dysfunctions.
 - C.2.3** The local examination: Includes the specific palpation of tissues of the musculoskeletal systems.

C.2.3.1 Conduct a palpatory examination of local tissues to determine the dysfunctions considered for treatment and the characteristics important in the selection of treatment including indications and contraindications.

C.3 Different palpatory examinations: Look at and record elements of pain provocation, sensory changes, tissue texture changes, examination of range of motion, and characteristics of end-feel barrier, depending on the diagnostic system used.

C.3.1 One or more of these elements (pain, sensation, tissue texture, range of motion, end-feel) are assessed.

C.3.2 The relative importance of these tests varies in the different manual medicine systems.

C.3.3 Manual medicine physicians have the ability to record the patient evaluation and patient progress by using various methods of measurement.

C.3.3.1 Manual medicine physicians should have the ability to record relevant specific manual medicine findings.

C.3.3.2 Manual medicine physicians should have the ability to record pertinent related outcome measures (e.g. visual analog scale [VAS], dolorimeter, impairment scales, general health scales).

D. MANUAL TREATMENT MODALITIES / M/M MEDICINE TREATMENT

D.1 Overview

D.1.1 Treatment in M/M medicine includes first conventional medical treatments, secondly manual treatment.

D.1.2 All manual treatment modalities in M/M medicine are prescribed by a physician working toward a definitive goal and with a full armamentarium of medication, surgery, psychotherapy, orthotics, injections and various other adjunctive modalities. As with any treatment regimen, the physician must select the best therapeutic agents for the situation, must calculate the appropriate dose and frequency for the agents and must both educate the patient and be prepared to deal with any potential side effects or untoward results.

D.1.3 This section deals only with manual techniques constituting core manual medicine techniques.

D.2 Exemplars of core M/M medicine treatment modalities

- D.2.1 Soft tissue techniques
 - D.2.1.1 Myofascial release (direct and indirect) techniques
 - D.2.1.2 Muscle energy techniques
 - D.2.1.3 Specific tissue-directed and/or goal-directed techniques (e.g. trigger point, exercised muscle chains, strengthening)
- D.2.2 Articular techniques
 - D.2.2.1 Mobilization (without thrust)
 - D.2.2.1.1 Active
 - D.2.2.1.2 Passive
 - D.2.2.2 Manipulation (passive mobilization with low amplitude and high velocity thrust technique)

E. BASIC CORE CURRICULUM STRUCTURE AND DELIVERY

E.1 The General Assembly of FIMM endorses the above outline of a basic core curriculum.

E.2 FIMM proposes that a *basic* core curriculum be structured to contain:

- E.2.1 Diploma course educational style structure (300 hours total)
 - E.2.1.1 Conferences, theory (125 hours)
 - E.2.1.2 Information/Introductory overview course (8 hours)
 - E.2.1.3 Practical training (125 hours)
 - E.2.1.4 Assisted/Supervised commented consultations of true patients in a hospital or other patient setting
- E.2.2 Diploma course educational content distribution
 - E.2.2.1 Theory 35 %
 - E.2.2.2 Examination 30 %
 - E.2.2.3 Treatment 35 %

E.3 Ideal organization of teaching manual medicine

- E.3.1 Classroom teaching
- E.3.2 Student examines normal persons under supervision
- E.3.3 Student examines patients under supervision
- E.3.4 Student treats normal persons under supervision
- E.3.5 Student treats patients under supervision
- E.3.6 Student examines and treats patients