UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Assessment and Treatment of The Movement System

2425-3-I0201D144

Aims

**Know in depth the movement system according to the biopsycho-social system. Muscular-joint-bone component-motor control and their adaptations
Identify the mechanisms that induce component modifications. Evaluation of the path of least resistance-flexibility and relative stiffness, from micro trauma to macro trauma.
Assess dysfunctional movements, contributing factors and symptoms associated with them. establish a dysfunctional diagnosis. Provide treatment based on the Diagnosis made and contributing factors identified.

Contents

**Based on a careful kinesiological, muscular and functional evaluation, we are able to identify the dysfunctions of the movement patterns that are the cause of skeletal muscle pain. Tissue damage, which is the source of the symptoms, is caused by repeated gestures and maintained postures which stress the structures of the locomotor system in a non-physiological way. The physiotherapeutic diagnosis of a movement dysfunction allows the cause of the patient's problem to be identified and provides a clear and effective line of intervention as it is aimed at resolving the diagnosis and the contributing factors.
Diagnoses therefore focus on the movement that produces the pain, rather than on the pathoanatomical source of the symptoms.

Detailed program

Bio-Psycho-Social Model: role and importance of the Movement System

**role of the physiotherapist

**Pathological kinesio and pathokinesiological model

**Balance of the movement system-importance of the instantaneous center of rotation

**Alignment - postures maintained - repeated movements - relationships with symptoms.

Primary test and secondary test**

- review of the pertinent muscular biology

- neural and muscular factors in alignment an d strength

**Normal muscle - Atrophied muscle - Hypertrophy - Muscle strain - Long muscle - Short muscle - Stiff muscle

- mechanism of the modification of the components

- length associated changes

- sarcomere engagement - adding and loss more sarcomere in series

**Muscle stretching: increase length against short range elasticity

**Muscle adaptations dissociated changes in synergists

**Muscle stiffness: passive resistance to stretching

- alignment correction**** Alignement-active vs passive movement pattern****

- assessment of muscular performance

- muscular adaptations

Relative flexibility/stiffness Path of least resistance

**Modulatory elements-Neurological component-Motor control

**Biomechanical elements Statics and kinematic and kinetic dynamics

**Diagram of degenerative spinal pathology *Hresko, MT

**Patient management: the stages

Prerequisites

Access granted to 3rd year students who have passed all the 2nd year exams

Teaching form

For each teaching unit

Teaching (DE) 18 hours
Interactive teaching (TEL-DI) 4 hours (tasks, group work, formative assessments, etc.).
Interactive teaching (DI) 2 hours with the nature of questionnaires or ongoing tests.

Textbook and teaching resource

- Valutazione e trattamento delle Sindromi da Disfunzioni del Movimento Shirley Sahrmann ISBN 880207080-6 Pagine 480 Copertina Cartonata Editore: UTET Anno di edizione: 2005 Skeletal Muscle Structure, Function, and Plasticity Richard L Lieber Lippincott Williams & Wilkins (Sep 2009) Edition: Third ISBN-10: 0-7817-7593-0 ISBN-13: 978-0-7817-7593-9 Pub Date: September 2009 Pages: 336
**Slide in Power point

Semester

1nd semester

Assessment method

Multiple choice test comprising 5 questions with only one correct answer and Open questions
Practical exam: clinical examination peer to peer
The correctness and consistency of the answers with respect to the question asked will be evaluated
Ongoing practical evaluations are planned

Office hours

By appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING