## **Posturology and Preventive and Compensatory Motor Activity**

## Prof. Riccardo Finco

***COURSE AIMS AND INTENDED LEARNING OUTCOMES***

The course aims to provide students with theoretical knowledge, and technical and practical skills, in order to be able to:

* perform an examination of posture and a functional evaluation of the spine;
* teach correct posture;
* rebalance the posture when it is altered;
* organise, plan and conduct individual lessons and group courses of preventive, compensatory and rehabilitative gymnastics for pain and spinal pathologies.
* to assess the athlete's posture and draw up corrective and compensatory exercise programmes to prevent pain and injuries affecting the various anatomical structures.

*Intended learning outcomes*

At the end of the course, students who have regularly attended the theoretical and practical lessons will be able to:

* perform an examination of posture and a functional evaluation of the spine;
* formulate a personalised work plan based on the subject's needs or the spinal pathology;
* organise, plan and conduct individual lessons and group courses of preventive, compensatory and rehabilitative gymnastics for pain and spinal pathologies.
* know useful concepts of ergonomics for correctly organising the work environment (load handling, ergonomic chair, work table, computer positioning), and correctly choosing furniture (bed, pillow, armchair) and clothing for spinal compliance.
* evaluate the main postural compensation for the athlete and plan related corrective and compensatory training.

***COURSE CONTENT***

*To examine posture and evaluate spinal function* and information from X-ray examinations in order to formulate an individual work plan.

*Exercise progressions of*:

– Respiratory training exercises.

– Postural training exercises.

– Mobility exercises.

– Exercises and postures for muscular stretching.

– Exercises for decompressing intervertebral discs.

– Exercises to strengthen and stabilise the spinal column.

– Balance and proprioception exercises.

*Specific work programmes for vertebral pain and problems at the development age.*

– Scoliosis, Lumbar hyperlordosis, Dorsal hyperkyphosis, Scheuermann’s Disease.

- Prevention of school-related pain and vertebral pathologies.

*Specific work programmes for vertebral pain and problems in adults*

Back School: for the prevention and treatment of backache.

The cardinal points of the modern Back School.

1. Information: anatomy and physiology of the spinal column, the causes of vertebral pain.

2. Preventive, compensatory and re-educational gymnastics.

3. Correct use of the spinal column: the ergonomics of posture and movements.

4. Relaxation techniques.

5. Nutrition and Life style.

6. Attitudes to motor activities.

Prevention of workplace-related pain and vertebral pathologies.

Rehabilitation programme for different pathologies of the spine: *lombosciatica of the hip from a hernia or bulging disc, spondylolisthesis, scoliosis pain in the adult, ankylosing spondylarthritis*.

– *Neck School: for the prevention and treatment of cervical pain and cervicobrachial pain.*

– Adapting the Neck School to the after-effects of *cervical whiplash*.

*Specific work programmes for vertebral pain and problems in the elderly.*

– Spondyloarthrosis, Stenosis of the spinal canal.

– Bone School: for prevention of osteoporosis.

– Adapting the Bone School to the after-effects of vertebral fracture.

Specific work programmes for defects and problems of the lower limbs and the temporomandibular articulation.

*Corrective and compensatory work programmes for the main pains and musculoskeletal compensation in the athlete*:

– Evaluation of posture and of the main movement compensations.

***READING LIST***

B. Toso, *Back School,* *Neck School*, *Bone School: programmazione, organizzazione, conduzione e verifica,* Edi Ermes, Milan, 2003.

B. Toso, *Back School, Neck School, Bone School: programmi di lavoro specifici per le patologie del rachide*, Edi Ermes, Milan, 2003.

B. Toso, *Mal di schiena: prevenzione e terapia delle algie vertebrali,* Edi Ermes, Milano, 2013.

B. Toso, *Cervicalgia: i consigli per prevenirla,* *gli esercizi per curarla*, Edi Ermes, Milano, 2013.

S. Pivetta-M. Pivetta, *Tecnica della Ginnastica Medica,* *Scoliosi*, Edi Ermes, Milan, 2002.

Updating monographs from the Scoliosis and Vertebral Pathologies Study Group:

S. Negrini, *L’ipercifosi e le patologie del rachide dorsale,* 2003.

C. Trevisan-M. Romano-S. Negrini, *Dorso curvo in età evolutiva*, 2011.

C. Trevisan-M. Romano-S. Negrini, *La valutazione della scoliosi,* 2010.

C. Trevisan-M. Romano-S. Negrini, *Lombalgia acuta,* 2011.

S. Negrini, *Linee guida al trattamento della scoliosi,* 2012.

S. Negrini, *Linee guida al trattamento della lombalgia cronica,* 2013.

C. Trevisan-F. Negrini, *Osteoporosi,* 2014.

***TEACHING METHOD***

Theory lectures in the lecture room, practical additional classes in the gymnasium, testing specific tools and equipment for the examination of posture and for compensatory and re-educational gymnastics.

***ASSESSMENT METHOD AND CRITERIA***

Oral examination to verify knowledge of the theoretical course schedule.

Practical examination to verify the technical and didactic skills related to the program of the practical lessons of the course.

In the exam, students will be asked to present the worksheets used during the lectures: the posture examination sheet, the sheets used to evaluate spinal functionality (BDI, Back Disability Index, and NDI, Neck Disability Index), the LRI (Lumbar Pain Risk Index) and CRI (Cervical Pain Risk Index) scores and the diary for self-monitoring of pain.

***NOTES AND PREREQUISITES***

Intellectual interest and curiosity is assumed for preventive, compensatory and re-educational gymnastics, specific for pain and pathologies of the spine. It is good for students to adopt a positive mental attitude towards learning the theoretical and practical bases that will allow them to then communicate what they have experienced first-hand with their future students.

Further information can be found on the lecturer's webpage at http://docenti.unicatt.it/web/searchByName.do?language=ENG or on the Faculty notice board.