# Motor activity in cardiovascular and respiratory diseases

## Prof. Massimiliano Bianco

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

The course aims to teach students the essential physiopathological theory on the most common diseases affecting the cardiovascular and respiratory systems in various age groups, highlighting the role different physical motor activities can play in modifying the clinical course of the disease.
At the end of the course, students will be able to use their physiology and pathophysiology knowledge to intervene in the natural course of the most common cardiovascular and respiratory diseases through the administration of physical activity. In particular, they will possess greater competence in the following topics:

– Physiology and physiopathology of physical and sporting activities.

– Atherosclerosis: definition, epidemiology, physiopathology, risk factors, protective factors, correlated clinical profiles, role of motor activity.

– Ischaemic heart disease: definition, epidemiology, physiopathology, risk factors, protective factors, diagnostic notes, clinical profile of angina, infarct and heart failure, role of motor activity.

– Hypertension: definition, epidemiology, physiopathology, risk factors, causes of hypertension secondary, protective factors, diagnosis, clinical profile, prognosis, notes on therapy, role of motor activity.

– Diabetes mellitus and metabolic syndrome: definition, epidemiology, physiopathology, risk factors, protective factors, diagnosis, clinical profiles, prognosis, notes on therapy, role of motor activity.

– Cardiomyopathies: definition of hypertrophic cardiomyopathy, dilated cardiomyopathy, arrhythmogenic cardiomyopathy and myocarditis, epidemiology, physiopathology, aetiology, clinical profiles, prognosis, their role in sudden sports deaths.

– Congenital heart diseases: revision of cardiovascular anatomy and physiology; description of the most common congenital heart diseases in the adult with respect to motor activity.

– Arrhythmias: physiology and basic physiopathology of cardiac electrical activity, basic notes on electrocardiography, clinical profiles, distinctions between tachy-/brady- arrhythmias, distinctions between atrial/ventricular arrhythmias, ventricular preexcitation, role of motor activity.

– Elements of physiology and physiopathology of the respiratory system.

– Bronchial asthma: definition, epidemiology, physiopathology, aetiology, diagnostic notes, clinical profile, notes on therapy, role of motor activity.

– Chronic Obstructive Pulmonary Disease: definition, epidemiology, physiopathology, risk factors, diagnostic notes, clinical profiles, prognosis, role of motor activity.

***READING LIST***

P. Zeppilli, *Cardiologia dello Sport*, CESI, Roma, 2014, 5th ed.

P. Zeppilli-V. Palmieri-M. Bianco-S. Gervasi-V. Santoriello, *Manuale di Medicina dello Sport con elementi di traumatologia e pronto soccorso”* CESI, Roma, 2020, 4thed.

C. Rugarli*, Medicina Interna sistematica*, Edra Masson Italia, 2015.

Acsm, *Guidelines for Exercise Testing and Prescription*. Lippincott Williams & Wilkins, 2021, 11th ed.

***TEACHING METHOD***

Lectures, practical lessons.

***ASSESSMENT METHOD AND CRITERIA***

An oral exam. Students must demonstrate knowledge of the key physiological and pathophysiological concepts of the course topics covered, and know how to orientate themselves between the various topics and fundamental questions discussed in class, with particular reference to the role of physical activity.

***NOTES AND PREREQUISITES***

*Prerequisites*

The student must possess in particular, but not exclusively, a basic knowledge of the anatomy, physiology, exercise physiology and biochemistry of the cardiovascular and respiratory systems.

In case the current Covid-19 health emergency does not allow frontal teaching, remote teaching will be carried out following procedures that will be promptly notified to 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.