

Clinical Cardiovascular Physiology – 2022.

**Elective course for
medical students in the 3-6th years,
pharmacy students in the 4th year, as well as
PhD students**

Course directors:

Dr. Zoltán Benyó, Professor of Physiology, Director, Dr. Éva Ruisanchez associate professor (ruisanchez.eva@med.semmelweis-univ.hu, Phone: 210-0306), Institute of Translational Medicine, Semmelweis University

Besides the course directors, internationally recognized experts, professors of special topic areas related to clinical cardiovascular physiology are also invited as guest lecturers

Time and location: Lectures and demonstrations will be given during the 2nd semester of the 2021/2022 academic year for 14 weeks on each Thursday afternoon at 17:00-18:40 in the Hány Lecture Hall (EOK).

The purpose of the course: *To refresh and extend* – in selected topics – the basic knowledge related to normal and pathological functions of the human circulatory system. *To integrate* the latest scientific results related to different organization levels of the cardiovascular system – from system physiology to subcellular level. *To discuss and demonstrate* the principles and techniques of measurements, as well as the physiological and pathophysiological mechanisms related to the application of modern noninvasive cardiovascular diagnostic procedures in the clinical practice.

Topics:

February 3.

Cardiovascular implications of the healthy and the diseased kidney (Dr. Péter Hamar)

February 10.

Holiday

February 17.

Investigation of blood pressure regulation by use of transgenic technologies
(Dr. Zoltán Benyó)

February 24.

Physiological background of the treatment of myocardial ischemia (Dr. Gergely Szabó)
Coronary circulation (Dr. Tamás Ivanics)

March 3.

Biomechanical properties of cerebral aneurisms, their computer modeling
(Dr. István Nyáry and Dr. Róbert Nagy)

March 10.

Alterations of the cardiovascular system in pregnancy and polycystic ovary syndrome
(Dr. Szabolcs Várbíró)
The cardiovascular risk and the protection of menopausal women (Dr. Gabriella Masszi)

March 17.

Age related changes in the vascular system, role of sexual hormones (Dr. György Nádasy)
Interventional radiological procedures on arteries and veins (Dr. Viktor Bérczi).

March 24.

Ultrasonic investigation of the human heart: theoretical background; 2D-, M-, Doppler-mode, color Doppler imaging, echocardiography; diagnostics of valve insufficiency and coronary diseases. Duplex ultrasonic investigation of large vessel function: measurement of vessel wall elasticity, Doppler-indexes (Dr. Domonkos Cseh)

March 31.

Cardiovascular effects of hypersensitivity reactions (CARPA) (Dr. László Dézsi)
Modern methods for measuring and monitoring arterial blood pressure (Dr. Ákos Jobbágy)

April 7.

Visit to the MRI Cardiovascular Diagnostic Unit of the Semmelweis University Heart Center
(1122 Budapest, Határőr út 18.)
(Dr. Attila Tóth)

April 21.

Role of endothelial mechanisms in clinical symptoms (Dr. Zsolt Pécsvárady)

April 28.

Hemodynamic background of normal and pathological cardiovascular functions;
“hemodynamic exercise” and prevention of diseases (Dr. Anna Monori-Kiss)

May 5.

Vascular aging (Dr. Zoltán Ungvári)

May 12. Written examination (Dr. Éva Ruisanchez).

Acknowledgement of the course: regular attendance is required (**maximum 3 absences!**); **signature and 2 credit points** will be provided after a successful written exam (graduate students: test; PhD students: test + essay). Source: material of the lectures and supplementing literature provided by the lecturers. Lecture material will be available via internet.