UE Cardiovascular physiology and integrated metabolism

ECTS
6 crédits

Composante
UFR de Chimie et de biologie

Période de l'année
Toute l'année

Diplômes intégrant cet élément

- Master Biologie - Santé

Langue(s) d'enseignement: Anglais
Ouvert aux étudiants en échange: Oui
Code d'export Apogée: YAX9BI20

Présentation

Description

I. LECTURES (20 hours)

1- Cardiac energy metabolism: energetic regulations; cardiac energy transfer

- Bioenergetics and the role of oxygen in bioenergetics

- Contraction in cardiovascular systems, compartmentalization and energy transfer

- Modular organization of cardiac energy metabolism

- Metabolic aspects of the Frank-Starling’s law in the heart

2- Recent progress in basic cardiovascular physiology

Informations non contractuelles.
Dernière mise à jour le 30 juin 2026

- Heart and chronobiology

- Heart rate and longevity

- Cardiac conditioning (pre-conditioning, post-conditioning and remote conditioning)

- Intracellular signaling pathways in vascular systems

- Chronic exercise and vascular function

3- Mechanistic approaches in cardiovascular pathophysiology

- Recent advances in cardiac pharmacology

- Nutrition and cardiovascular risk

- Cardiovascular consequences of obesity and insulin resistance

- Oxidative stress and cardiovascular system

- Strategies for prevention of vascular diseases: pharmacology and prophylaxis

- Endothelial dysfunction in vascular pathologies

4- Vulnerable plaque

- Evolution of the concept of coronary artery disease

- Vulnerable plaque, a main problem of public health

- New strategies for vulnerable plaque detection

- Non-invasive imaging tools: nuclear medicine, ultrafast computed tomography, magnetic resonance imaging

II. TUTORIALS (20 hours

Analysis of scientific publications that illustrate different aspects of the lectures and oral presentations by the students (two to three presentations per student).

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Dernière mise à jour le 30 juin 2026

Heures d'enseignement

CM	CM	15h
TD	TD	25h

Période : Semestre 9

Compétences visées

After following this course, the students should have acquired the latest knowledge in the field of cardiac cellular and integrated physiology. They should be able to understand all heart diseases, from their clinical manifestation up to their therapeutic management, including the tools used for clinical diagnosis. They should have acquired all the bases that allow them to understand the physiological regulation of a complex system.

Infos pratiques

Contacts

Responsable pédagogique

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