Cardiology: Basic concepts  ref: CA012011

**Description:**
This module details the functioning of the various tissues and organs that must be understood before moving on to cardiology itself, namely the cell, the neuron, the nervous system, the renal system, blood lipids, the cardiovascular system, the electric activity of the heart and the cardiac cycle, arterial pressure and its regulation and cardiovascular risk factors.

Atherosclerosis and dyslipidemias  ref: CA022011

**Description:**
This module describes the stages in the development of atherosclerosis and gives a definition of the various dyslipidemias. It also explains the lipid theory and its link to coronary heart disease. Finally, the module gives a reminder of good practices in screening, preventing, and treating dyslipidemias.

Arterial hypertension and its treatment  ref: CA032011

**Description:**
This module details all aspects of arterial hypertension i.e. definition, epidemiology, consequences on target organs and tissues, medical exam and treatment of the hypertensive patient.

Coronary insufficiency  ref: CA042011

**Description:**
This module starts with a reminder of the basic physio-anatomy of the heart and coronary vessels. It then goes on to explain myocardial ischemia, angina and infarction and the way in which they often unavoidably lead to cardiac insufficiency.
Arterial disease  ref: CA052011

Description:
This module starts with an extensive description of atherosclerosis, its development stages and the thrombogenic risk factors which are associated with it. It then goes on to explain the basic concepts of coronary anatomy and leads on to a description of the various acute coronary syndromes. This includes a complete and thorough description of the diagnostic procedures associated with these syndromes, from the medical exam to the most recent imaging techniques. The module then describes the various drug treatments for these syndromes as well as interventional radiography. The module finishes with a description of percutaneous coronary interventions and their potential complications.

Venous disease  ref: CA062011

Description:
This module covers venous disease in general and more precisely venous thrombosis (mechanisms, typology, risk factors and diagnosis). It then describes the two main complications of venous thrombosis: pulmonary embolism and postthrombotic syndrome. It also presents a wide range of (non-)drug measures for the prevention of venous diseases in general. The module ends with a description of the various drug therapies and surgical interventions available.

Circulatory system: basic concepts  ref: CA072011

Description:
This module begins with the basic notions of cardiovascular anatomy and physiology: the circulatory system, the blood flow and the structure of blood vessels. It then addresses the problem of hemostasis under different angles: platelet hemostasis mechanisms, blood coagulation, blood clot formation and fibrinolysis. Finally, it takes a look at the methods of investigation of blood coagulation disorders and their clinical applications.
Nervous system

- **Neurobiology** ref: CN012011
  
  **Description:**
  
  This module gives a reminder of the structure of the central nervous system and the functioning of its constituting cells. It also explains the spread of the nervous impulse through ion channels, membrane potential variations and membrane and synaptic depolarization.

- **Neurotransmission** ref: CN022011
  
  **Description:**
  
  This module gives a reminder of the way neurotransmitters work and the ways in which drugs affect the central nervous system. It details how each type of neurotransmitter works, and in particular: acetylcholine, monoamines, adrenalin, serotonin, histamine, amino acids and peptides. The last chapter covers the way synapses of the autonomous nervous system work.

- **Epilepsy** ref: CN032011
  
  **Description:**
  
  This module details epilepsy: definition, etiology, physiopathology, and classification, partial and generalized fits. It gives clues as to the differential diagnosis and the proper treatment of the disease.

- **Pain** ref: CN042011
  
  **Description:**
  
  This module gives a reminder of the physiological anatomy of the central nervous system and of the transmission of pain, followed by pain assessment methods and various methods of pain relief.
Neuropathic pain and its treatment ref: CN052011

Description:
This module gives a reminder of the etiology of, and the various mechanisms involved in neuropathic pain. It then gives a detailed description of the most frequent types of neuropathic pain: diabetic neuropathy, postherpetic neuralgia, facial neuralgia, AIDS neuropathy and neuropathy developed with cancer. The last chapters cover their diagnosis and management.

Cognition and depression ref: CN062011

Description:
After a review of the physiology of cognition and of the role of dopaminergic pathways, this module covers depressive disorder, its cognitive consequences and its treatment using serotoninergic antidepressants.

Sleep and depression ref: CN072011

Description:
This module covers the different stages of normal sleep and explains their role. It addresses the consequences of sleep deprivation on the body. It also details various sleep disorders and their treatment.

Dementias ref: CN082011

Description:
This module lists and defines the various types of dementia. It also details various aspects of Alzheimer’s disease: clinical history of the disease, diagnosis and treatment.

Anxiety disorders ref: CN092011

Description:
This module describes the most frequent anxiety disorders: anxiety itself, panic disorder and obsessive compulsive disorder. It also addresses other less frequent anxiety disorders like post-traumatic stress disorder.
Mood disorders ref: CN102011

Description:
This module defines mood disorders in general and gives a complete classification. It also covers major depressive disorder and bipolar disorder in more detail.
### Diabetes and its treatment

**Description:**
This module gives a reminder of how the pancreas and its secretions work, followed by the physiopathology of the various forms of diabetes and their treatment. It also details their many acute and chronic complications.

### Dysmenorrhoea

**Description:**
After a description of the anatomy of the female reproductive system and the menstrual cycle, this module explains the physiopathological mechanisms underlying primary and secondary dysmenorrhoea as well as various treatment options.
Physiology of the respiratory system ref: SR012011

Description:
This module starts with the basic principles of respiration. It then describes the anatomy, micro-anatomy and functions of the upper and lower airways, from the nasal orifice right down to the alveoli. It then leads on to a detailed description of the respiratory mechanism and the underlying anatomic structures (respiratory muscles, thorax and pleura). It continues with the essentials of ventilation, perfusion and oxygen transport. It ends with a detailed review of the main functional respiratory tests used by lung specialists.

Chronic obstructive pulmonary disease ref: SR022011

Description:
This module starts with a series of definitions considered useful with regard to understanding COPD. It then covers the main epidemiological data for this disease. It continues with a list of risk factors for COPD while making the distinction between personal and environmental factors. It describes in detail the pathogenic mechanisms underlying COPD and covers the notion of protease-antiprotease imbalance and oxidative stress. It then leads on to a detailed physiopathological description of COPD and establishes a clinical picture of the disease. Finally, it covers all aspects of the overall treatment of a COPD patient.

Asthma ref: SR032011

Description:
This module starts with a precise definition of asthma under different angles before reviewing the main epidemiological data regarding this pathology. It continues with a detailed description of the pathogeny and physiopathology of the disease. It then describes different clinical pictures observed in asthma sufferers. Finally, it addresses the issues of diagnosis and treatment of asthma in its (non-)pharmaceutical approach.
Smoking cessation ref: SR042011

**Description:**
After a reminder of the physiopathological mechanisms of nicotine addiction, its effects on various organs and the diseases it can cause, this course explores all the existing intervention (non-)pharmaceutical techniques that can be used in view of obtaining nicotine weaning. It also describes ways to measure levels of dependence, the process and challenges of smoking cessation.

Allergic rhinitis ref: SR052011

**Description:**
After a description of the upper airways and the physiopathological mechanisms of allergy, this module covers all the notions needed for understanding allergic rhinitis (such as triggers for example). It leads on to a clinical description of the pathology and the diagnostic procedure that enables its detection. It ends with the exploration of various local and global, (non-)drug treatments.
Antibiotherapy ref: AI021011

Description:
This module starts with a general introduction to the problem of antibiotic prescription and the criteria used to make the right choice. It then reviews the various classes of antibiotics and leads on to the following notions: pharmacodynamics and pharmacokinetics. Finally, it addresses bacterial resistance and its various acquisition mechanisms.

Bacteriology ref: AI022011

Description:
This module starts with a detailed description of the structure and functional anatomy of bacteria. It also makes the distinction between bacteria and viruses. It then explains bacterial growth and bacterial metabolism and reviews the physical/chemical environment in which this growth occurs. It then leads on to the various classification methods of bacteria. It also details the various laboratory tests used to study bacteria. It describes the bacterial nomenclature and reviews the main germs. Finally, it presents the various antibiogram methods.

Infection ref: AI032011

Description:
After a description of the mechanisms underlying bacterial infection, this module reviews the various ways in which the body can defend itself. It ends with notions of diagnosis by describing the signs and symptoms of an infectious process.
Infections in general practice  ref: AI042011

Description:
This module first establishes some basic general notions such as high-risk individuals. It goes on to give a relatively complete description of ear, nose and throat infections in general and addresses certain particular infections in more detail. The module also covers lower airway infections among which bronchitis and pneumonia. It also covers cutaneous infections (boils, impetigo, and erysipelas) and urinary infections (cystitis and acute pyelonephritis).

Nosocomial infections  ref: AI052011

Description:
This module covers infections caught in hospital. It starts with defining different types of nosocomial infections and describes their various risk factors. It then addresses the problem of urinary infections which are by far the most frequent and their specific risk factors, complications and treatments. It leads on to a description of lower airway infections and cystic fibrosis and their treatment. It then gives a detailed description of septicemia, postoperative infections, orthopedic surgery infections and the mechanism and complications of neutropenia. Finally, it ends with a presentation of meningitis and pseudomembranous colitis.