

Section 2: Year 2 modules

Details of all the modules including timetables, more information, reading lists and resources are found at the Year 2 Moodle site or on the medical school web pages <http://www.ucl.ac.uk/medicalschoo/staff-students/course-information/year-2>

Module 5: Movement and Musculoskeletal Biology

This six-week module aims to provide you with an outline of core knowledge relating to normal and abnormal development, and the structure and function of the musculoskeletal system. By making use of example cases, this module aims to place this core knowledge in a clinical context and to examine the impact, on the individual and society, of disorders of mobility, locomotor function and infection.

Aims of the module:

The module aims to provide:

- a review of the normal structure and function of the musculoskeletal system at the molecular, cellular, organ and whole-body level
- a consideration of the effects of disorders of the musculoskeletal system on individuals, society and the health care system

Module 6: Neuroscience and Behaviour

This module introduces you to the integrative functions of the central nervous system. It is essentially about how we walk and talk, how we feel and experience the world about us. Modern real time imaging techniques are leading to a greater understanding of how the brain functions when undergoing specific tasks involving attention, memory and movement, as well as providing powerful tools for clinical diagnosis of brain pathology. We will look at how the brain receives, processes and relays sensory information; how signals are transmitted from cell to cell in the nervous tissue by chemical transmission and synapses. We will also study how brain chemistry can malfunction in diseases, such as Parkinson's and Alzheimer's disease, and we will look at the effects of drugs on the brain. We will also investigate the impact of brain disease and mental health problems on the life of individuals, their community and society.

Aims of the module:

The module aims to provide:

- an understanding of the structure and function of the central nervous system
- knowledge of the origin of common diseases of the nervous system
- an introduction to the principles behind and skills needed to test nervous system function in clinical practice

Module 7: Endocrine Systems and Reproduction

This module introduces you to the integrative functions of the major endocrine axes. The module is concerned with how the major hormones are produced and how they each act to integrate metabolism and fluid balance. We will investigate the role of selected endocrine axes in maintaining a stable environment for cells to function within the body, and will consider how defects in hormone production and/or action can lead to profound clinical symptoms. We will also look at how the production and metabolism

of each hormone is normally controlled by feedback loops and how these can go wrong in disease.

Aims of the module:

The module aims to provide:

- definitions of the clinical prevalence of endocrine disorders, including iatrogenic states, thyroid disease, diabetes and other syndromes of insulin resistance, disorders of reproductive physiology
- knowledge and understanding of each of the major endocrine axes, emphasising the clinical significance of normal and abnormal feedback loops
- knowledge and understanding of the scientific basis of treatment options available for specified endocrine disorders
- a comparison of the mechanisms of action for hydrophilic and hydrophobic hormones, explaining those factors that can act in an endocrine target tissue to modulate the actions of hydrophilic and hydrophobic hormones
- an appreciation of (and explanations for) the variation in clinical measurements between different hormone assays and the possible impact of such variation on clinical management decisions.

Module 8 Genetics, Development, and Cancer

This module starts by introducing you to modern genetics and the developmental system in detail. The module will also look at the clinical application of these topics, focusing specifically on developmental abnormalities and the genetic basis of disease. The module then introduces you to the nature of cancer, its fundamental elements and their molecular basis. The factors causing cancer and its effects on individuals are considered in the light of understanding the elements of the cancer process. A scheme for integrating and understanding the interrelationship of these elements will be developed. It also acts as the first step in the Cancer patient pathway which you will continue in Year 4.

Aims of the module:

The module aims to provide:

- knowledge and understanding of the developmental and genetic processes that contribute to the development of a healthy individual
- a foundation for understanding the clinical basis for developmental abnormalities and genetic disease
- knowledge and understanding of the fundamental elements and complexity of cancer, with emphasis on its molecular basis
- an understanding of and practice in application of this knowledge to clinical practice