Course: Pathology

credits: 5

Course code	BOVH24MDPATH
Name	Pathology
Study year	2026-2027
ECTS credits	5
Language	Dutch, with parts in English
Coordinator	T.E. Vrenken

Modes of delivery	Lecture Teaching method 2 Tutorial
Assessments	Medical Immunology - Computer, organised by STAD examinations Pathology and Cytology - Computer, organised by STAD examinations

Learning outcomes

- You explain in detail how and where the cells and proteins of the innate and adaptive immune systems are formed and activated; you describe their role in fighting infection; and you explain how changes in the immune system lead to disease.
- You apply your knowledge of the principles of the main immunological methods to solve simple diagnostic problems and make suggestions for appropriate diagnostic procedures in cases of immune system disorders.
- You explain in detail reversible and irreversible cell damage and forms of cell death, and you apply this knowledge to a clinical case by analysing and presenting the causes, mechanisms and symptoms of pathological processes to fellow students.
- You will explain the aetiology, diagnosis, biological mechanisms and epidemiology of tumours, and you will use this knowledge to analyse and present practice-oriented issues and case studies.
- You will understand how the immune system works, describe inflammatory responses, and apply this knowledge to recognising and explaining immunopathological disorders (including autoimmune diseases, allergies and immunodeficiencies) using relevant case studies.
- You can recognise and distinguish between normal and reactive benign cervical cells and neoplastic squamous cells in cytological smears of the cervical region on the basis of morphological characteristics.

Content

In this module, you will learn the basics of cytology and pathology, and we will explore medical immunology in greater depth. In Medical Immunology, you will study the development and functioning of the innate and adaptive immune systems. Special attention is also given to the inflammatory response, the complement system, the MHC system, various immunological laboratory techniques and how disturbances in the immune system can lead to disease. This sub-module consists of theory lectures and seminars.

In Pathology and Cytology, the emphasis is on pathology, with a focus on the diseased cell, and you will learn to recognise healthy and pathological cells and tissues. You will explore the mechanisms of reversible and irreversible cell damage and cell death, and apply this knowledge to pathological conditions. During the lectures, you will learn about various aspects of tumours, such as different diagnostic methods, key underlying molecular processes and possible causes leading to tumour growth and metastasis, and you will gain knowledge of tumour epidemiology. Finally, you will explore various immune-related pathologies, such as hypersensitivity reactions, autoimmunity, immunodeficiency and transplant reactions, by understanding and applying the underlying mechanisms and their consequences. In addition, you will work in groups on a case study based on the course material and present this to the class.

A special component of the course is cervical pathology, in which you will study the cytology of the cervical mucosa. You will learn to recognise normal cervical cell patterns, identify various non-neoplastic and iatrogenic cellular changes, and study the precancerous stages of cervical squamous cell carcinoma. In this way, you will understand the pathogenesis of cervical carcinoma in relation to the morphological changes in the epithelium.

Included in programme(s)

Major Medical Diagnostics

School(s)

Engineering, Life Sciences & ICT

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