BeRS ACADEMY
e-learning pneumology platform

PULMONARY FUNCTION COURSES

INTRODUCTION

The full course consists of three modules in total :
Module 1 : General topics and obstructive disorders
Module 2 : Restrictive disorders, gas exchange, respiratory muscle, hyperventilation, blood gases
Module 3 : Sleep and exercise testing

Each module will be presented in two parts : one theoretical part to be viewed online and a second part more practical and interactive to be organised face to face with the various speakers.

The full cycle containing the three modules is organised every 1.5 year, as the duration of each cycle is 1.5 years. In this way, each trainee will have the possibility to attend the full course (three modules) during his-her pneumology traineeship.

FIRST THEORETICAL PART

We plan 7–8 theoretical online lectures per module (± 45 minutes each). After each lecture, a multiple choice questionnaire about the content will have to be filled in before having access to the following lecture.

SECOND PRATICAL PART

This practical and interactive session will be organised as far as possible in the auditorium of the CHU Saint-Pierre in Brussels. The first face-to-face interactive session in planned on **Friday 24th March 2023**.

If you have any practical questions about the organisation of the courses, contact immediately the BeRS Office : info@bers.be.

Attendees must be BeRS members and have to register online (www.bers.be) to attend these sessions.

The faculty was chosen among the best pulmonary function specialists of Belgium appointed at one of the following universities : UAntwerpen, ULB, VUB, UCL, UGent, UHasselt, KULeuven, UNamur, UMons and ULiège.

The course directors are Profs. Eric Derom (UZ Gent), Wim Janssens (UZ Leuven) and Eric Marchand (UCL Mont-Godinne).

Module I : General topics and obstructive disorders

Part 1 : this part consists in 8 theoretical online lectures (± 45 minutes each). After each lecture, a multiple choice questionnaire about the content will have to be filled in before having access to the following lecture.

1.1 Reference values – Prof. Dr. Wim Janssens (KULeuven)
General concepts, normal and abnormal values and lower limit of normal, severity, determinants of reference values, obstruction, restriction, GLI concept

1.2 Spirometry – Slow and forced vital capacity manoeuvres – Flow-volume loop – Dr. Shane Hanon (VUB)
Equipment, physiologic basics behind configuration of flow volume loop and volume time curve in healthy subjects and in disease, ATS/ERS criteria, standardisation and how to report results, contra-indications, measurement technique and pitfalls, obstructive, restrictive and mixed disorders, specific patterns, reversibility (definition and measurement)

1.3 Bronchoprovocation testing (methacholine, histamine, adenosine, exercise) – Prof. Dr. Renaud Louis (ULiège)
Bronchial hyperresponsiveness, direct and indirect stimuli, methodological aspects and procedures, expresion of results (PC20 and PD20), clinical utility/relationship with asthma control, effects of bronchoconstriction on lung function parameters effects of drugs (ICS) on bronchial hyperresponsiveness

1.4 Physiology of static lung volumes, compliance – Prof. Dr. Alexandre Legrand (UMons)
Pressure-volume relationship and elastic recoil of the respiratory system and its different components (lung, thoracic wall, ribcage, abdomen/diaphragm), physiologic determinants of static lung volumes, effect of disease (restrictive and obstructive disorders) on pressure-volumes relationship, lung compliance, closing volume, methods to measure static compliance

1.5 Body plethysmography (TGV-Raw) – Prof. Dr. Ellie Oostveen (UAntwerpen)
Description of equipment, physiological basics behind the measurements, pitfalls of measurements, manoeuvres, measurement of lung volume and airway resistance, ATS/ERS standardisation, clinical relevance and interpretation of lung volume and resistance in pathology, ATS/ERS standardisation

1.6 FRC measurement using multiple breath techniques: the Helium dilution and the N_2 wash-out technique – Prof. Dr. Eric Derom (UGent)
Definition, method of calculation, principle of Helium dilution and equipment. Principle of N_2 wash-out and equipment, quality control, difference with body plethysmography, ATS/ERS standardisation

1.7 Resistance Measurements (oscillometry) – Prof. Dr. Ellie Oostveen (UAntwerpen)
Definition, description of equipment, physiological basics underlying the measurements, pitfalls of measurements, basics of oscillometry and clinical interpretation/potential, difference with other methods to assess airways obstruction

1.8 New techniques to assess airways inflamation – Prof. Dr. Lieven Dupont (KULeuven)
Rationale, basics, methodology and clinical relevance, use in disease monitoring of FENO, induced sputum, VOCS in pulmonary disease

Module I : General topics and obstructive disorders

Part 2 : This face-to-face part consists in interactive key lectures and practical sessions. This on campus day is planned on Friday 24th March 2023 in CHU Saint-Pierre Brussels. Reminder : only those who have followed the full theoretical online part with success will be allowed to attend the live session.

INTERACTIVE KEY LECTURES

1.1. Lung function and its role in the diagnosis and follow-up of asthma and COPD
Prof. Thérèse Lapperre (UAntwerpen)
Lung function patterns in asthma/COPD, lung function and natural history and decline of pulmonary function in asthma/COPD….

1.2. Reversibility in airways obstruction asthma/COPD (theory)
Prof. Guy Brusselle (UGent)
Does it help in the differential diagnosis of asthma/COPD?

PRACTICAL SESSIONS

1.3. Interactive session on the Interpretation of obstructive disorders
Prof. Florence Schleich (ULiege) – Prof. Shane Hanon (UZ Brussel) - Dr. Stéphanie Everaerts (KULeuven)
Cases with asthma vs. COPD

INTERACTIVE KEY LECTURES

1.4. How to organise a pulmonary function lab – Quality control (theory)
Mr. Kevin De Soomer (UAntwerpen)
Quality control, calibration, logbook, personnel…

1.5. How to write a good protocol – automated protocols (theory)
Prof. Wim Janssens (KULeuven)
Examples of how to write a protocol

PRACTICAL SESSIONS

1.6. Case series
Prof. Wim Janssens – Mr. Kevin De Soomer (UAntwerpen)
Interpretation of poor-quality pulmonary function
Exercise : how to write a protocol