

# DISEASES OF THE RESPIRATORY APPARATUS

Total credits <b>13</b>	Theory credits <b>2.5</b>	Practical credits <b>10.5</b>
----------------------------	------------------------------	----------------------------------

## GENERAL OBJECTIVES

- To be familiar with the different types of patient with respiratory apparatus disease (prevalence) in order to develop appropriate prevention, diagnostic and treatment plans.
- To be familiar with the latest diagnostic techniques and treatment approaches.
- To be familiar, at both a general and individual level, with the basic, clinical and instrumental aspects of diagnosis and treatment of respiratory disease. To apply knowledge of this particular pathology in basic clinical practice.

## SPECIFIC OBJECTIVES

A. At the end of the program students must be able to identify the main problems associated with respiratory disease, specifically:

1. Dyspnoea
2. Chest pain
3. Cyanosis
4. Acropachy
5. Coughing
6. Expectoration
7. Haemoptysis

Students must have fully assimilated the knowledge about identifying respiratory problems gained during the course *General Signs and an Introduction to Clinical Pathology* prior to studying the diseases of the respiratory apparatus.

B. Students must be familiar with the theoretical bases of the diagnostic methods used in respiratory pathology, specifically:

1. Physical examination: inspection, palpation, percussion and auscultation
2. Conventional radiology
3. Bronchoscopy
4. CT, MR, angioradiology
5. Isotope studies
6. Analysis of pulmonary function: forced spirometry and CO transfer capacity. Arterial gasometry and stress tests
7. Thoracoscopy
8. Thoracotomy

C. Students must be familiar with the diagnosis and medical and/or surgical treatment of the main respiratory diseases, specifically:

1. Respiratory insufficiency
2. Chronic obstructive disease and other obstructive respiratory diseases
3. Sleep-related respiratory disorders
4. Bronchial asthma
5. Diffuse interstitial pulmonary disease
6. Pulmonary infections
7. Solitary pulmonary nodule. Hydatid cyst

8. Bronchopulmonary tumours
9. Thoracic trauma
10. Spontaneous pneumothorax
11. Congenital and acquired thoracic defects. Diaphragm diseases and tumours of the thoracic wall
12. Pleural disease
13. Pulmonary vascular disease
14. Diseases of the mediastinum

D. Students must develop the following skills:

1. Take a history and carry out a physical examination under supervision
2. Interpret the most important respiratory disorders on the basis of chest x-rays and thoracic CT scans
3. Interpret and, if possible, carry out basic functional examinations: spirometry and arterial gasometry
4. Observe the main thoracic diagnostic techniques: collecting sputum samples, thoracentesis, bronchoscopy, arterial gasometry, thoracoscopy, thoracotomy, etc.
5. Observe the pre-, peri- and post-operative management of surgical patients

## **SYLLABUS**

### **1. Respiratory insufficiency (1) (Dr J Roca)**

Concept and physiopathology of hypoxemia and hypercapnia. Tissue hypoxia. Classification and causes. Differential clinical characteristics.

### **2. Respiratory insufficiency (2) (Dr J Roca)**

Acute respiratory distress syndrome (ARDS). Treatment strategies: oxygen therapy and mechanical ventilation.

### **3. Chronic obstructive pulmonary disease (COPD) (1) (Dr R Rodríguez-Roisin)**

Concept, aetiopathogeny and physiopathology. Clinical aspects. Diagnosis. Acute exacerbations.

### **4. Chronic obstructive pulmonary disease (COPD) (2) (Dr R Rodríguez-Roisin)**

Treatment strategies for stable and acute exacerbation COPD.

### **5. Other obstructive pulmonary diseases (Dr R Rodríguez-Roisin)**

Bronchiectasis and mucoviscidosis. Obliterating bronchiolitis. Upper airway obstruction. Concept, aetiopathogeny and treatment.

### **6. Bronchial asthma (1) (Dr C Picado)**

Concept, aetiopathogeny and physiopathology. Atopy, allergy and bronchial hyperreactivity. Vasomotor and atopic rhinitis. Main clinical aspects. Serious acute exacerbation of asthma.

### **7. Bronchial asthma (2) (Dr C Picado)**

Treatment strategies of stable and acute exacerbation asthma.

### **8. Diffuse interstitial pulmonary disease (1) (Dr A Xaubet)**

Classification: idiopathic pulmonary fibrosis, extrinsic allergic alveolitis, pneumoconiosis. Concept, aetiopathogeny and physiopathology. Clinical aspects. Treatment strategy.

### **9. Diffuse interstitial pulmonary disease (2) (Dr A Xaubet)**

Sarcoidosis. Other clinical forms: pulmonary vasculitis and pulmonary haemorrhage. Histiocytosis X. Definition, aetiopathogeny, clinical features and treatment

**10. Respiratory disorders of sleep (1)** (Dr JM Montserrat)

Physiopathology of sleep and snoring. Concept, aetiopathogeny and physiopathology of apnea and hypoapnea. Clinical aspects.

**11. Respiratory disorders of sleep (2)** (Dr JM Montserrat)

Diagnosis and treatment strategies.

**12. Pulmonary infections (1): Pneumonia** (Dr A Torres)

Concept, aetiopathogeny and physiopathology. Community and nosocomial pneumonia. Clinical aspects. Diagnosis. Treatment strategies.

**13. Pulmonary infections (2): pulmonary tuberculosis** (Dr A Torres)

Concept and aetiopathogeny. Clinical aspects. Diagnosis. Treatment strategies. Preventive aspects.

**14. Bronchopulmonary, pleural and thoracic wall tumours (1)** (Dr E Canalís)

Concept, aetiopathogeny and physiopathology. Clinical aspects. Diagnosis. Classification. Localization and extension (TNM).

**15. Bronchopulmonary, pleural and thoracic wall tumours (2)** (Dr E Canalís)

Clinical aspects. Diagnosis. Pulmonary metastasis. Treatment strategies.

**16. Pleural disease** (Dr C Picado)

Pleural effusion: transudation, exudation, haemorrhage. Haemothorax, chylothorax and pseudochylothorax. Pleural empyema. Concept, aetiopathogeny and physiopathology. Clinical aspects. Diagnosis. Treatment strategies.

**17. Pulmonary vascular disease** (Dr J Roca)

Pulmonary thromboembolism. Primitive pulmonary hypertension. Concept, aetiopathogeny and physiopathology. Clinical aspects. Diagnosis. Treatment strategies.

**18. Thoracic trauma** (Dr JM Gimferrer)

Concept, aetiopathogeny and physiopathology. Clinical aspects. Diagnosis. Treatment strategies.

**19. Primary and secondary spontaneous pneumothorax. Bullous emphysema. Congenital malformations.** (Dr JM Gimferrer)

Concept, aetiopathogeny and physiopathology. Clinical aspects. Diagnosis. Treatment strategies.

**20. Diseases of the mediastinum** (Dr E Canalís)

Mediastinitis. Tumours and cysts. Concept, aetiopathogeny and physiopathology. Clinical aspects. Treatment strategies.

**21. Image diagnosis** (Dr C Ayuso)

Conventional thoracic radiology in pulmonary and pleural diseases and in mediastinic processes. Computed axial tomography (CAT). Magnetic resonance (MR). Angioradiology and nuclear medicine techniques.

**22. Pathological anatomy (1)** (Dr J Ramírez)

Chronic obstructive airway disease (COAD, bronchial asthma, bronchiectasis, others). Diffuse interstitial pulmonary disease (interstitial pneumonia, pneumoconiosis and pneumonia due to hypersensitivity).

**23. Pathological anatomy (2)** (Dr J Ramírez)

Benign and malignant pulmonary tumours and metastasis. Pleural and mediastinic tumours.

**24. Microbiological aspects of the respiratory apparatus** (Dr J González)

Techniques applicable to different types of sample and pathogen. Recommendations as regards diagnosis.

---

## **TEACHING PLAN**

---

**THEORY CLASSES:** These follow the syllabus

### **SCHEDULED CLINICAL TEACHING**

**A.** Seminars run simultaneously for all students, alternating with theory classes.

1. Managing the patient with respiratory insufficiency (Dr J Roca)
2. Managing the patient with chronic obstructive pulmonary disease (COPD) (Dr R Rodríguez-Roisin)
3. Managing the patient with bronchial asthma (Dr C Picado)
4. Managing the patient with diffuse interstitial pulmonary disease (Dr A Xaubet)
5. Medical approaches to the lung cancer patient (Dr JM Montserrat)
6. Surgical approaches to upper airway disease (Dr P Macchiarini)
7. Surgical approaches to pleural disease (Dr P Macchiarini)
8. Imaging techniques in patients with respiratory disease (Dr C Ayuso)
9. Practical pathoanatomical aspects of patients with respiratory disease (Dr J Ramírez)
10. Practical microbiological aspects patients with respiratory disease (Dr J González)