UAB
Universitat Autònoma de Barcelona

Medicine and Surgery V

Code: 106703
ECTS Credits: 7

2024/2025

Degree	Type	Year
2502442 Medicine	OB	5

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Teaching groups languages

You can view this information at the end of this document.

Prerequisites

It is recommended to have achieved the skills of the following subjects: Biochemistry and Molecular Biology, Cellular Biology, Human Anatomy (I and II), Histology, Human Genetics, Psychological Bases, General Pathology, Fundamentals of Surgery, Microbiology, Radiology and Physical Medicine, Pathology, General Pharmacology, Human Nutrition, Immunology, Epidemiology, Obstetrics and Gynecology.

A review would be advisable, for having sufficient knowledge of basic sciences since they have been completed three or four years ago. It is advisable to be fluent in pathophysiology, semiology, general

propaedeutics, to face the study of these clinical matters and the indication and interpretation of complementary diagnostic tests. Knowledge of pharmacology is necessary to be able to make the appropriate prescriptions and indications in the different pathologies and to assess the iatrogenic or toxic possibilities.

The student will acquire the commitment to preserve the confidentiality and professional secrecy of the data that may have access due to the learning of the assistance services. Also by maintaining an attitude of professional ethics in all their actions.

Objectives and Contextualisation

Endocrinology:

Acquire knowledge (etiology, clinic, diagnosis, treatment and rehabilitation) of endocrinological pathologies, nutrition and metabolism, and develop attitudes and skills for the care of patients with endocrinological, metabolic and nutritional pathology.
Obtain, classify and analyze information provided by the patient and his environment, as well as use and interpret complementary tests.
Handle the specific bibliography using all the available means of information, stressing the importance of continuing education.
Establish an order of problems and resources, in order to plan and realize a scale of priorities and objectives.
Know and treat the most common endocrinological, nutritional and metabolic diseases, assessing life-threatening and urgent processes.
Apply methods of preventive medicine in order to reduce the frequency of these diseases.
Neurology:

The subject Neurology-Neurosurgery within the subject MIC V is scheduled in the fifth year of the Degree of Medicine. At the end of the training period, where the student's knowledge allows him to face the patient with discomfort involving the nervous system, to make a syndromic diagnosis, in accordance with the observed symptoms, to propose a lesional topography, which will allow d 'according to the clinic and the complementary tests, establish the etiological cause, to allow the realization of a prognosis and treatment.

This teaching guide proposes teaching and learning mechanisms aimed at obtaining pre-established and a priori defined objectives, which can and must be modified over time in order to adapt them to new needs.

The student must have acquired:

1. The knowledge, attitudes and aptitudes for the care of the patient with neurological-neurosurgical pathology.

2. Know how to obtain, classify, use and analyze the information provided by the patient and his environment, as well as use and interpret complementary tests.

3. Establish an order of problems and resources, in order to plan and realize a scale of priorities and objectives.

4. Know and treat the most common neurological diseases, evaluating life-threatening and urgent processes.

5. Apply methods of preventive medicine to reduce the frequency of neurological disease.

6. Handle the specific bibliography using all available information means, stressing the concept of continuing education.

Competencies (listed according to degree report)

Demonstrate that you understand the manifestations of the disease on the structure and function of the human body. E26
Demonstrate a basic level of research skills. T07
Demonstrate, in professional activity, a critical, creative and research-oriented point of view. T05
Appropriately give the patient and/or companion relevant information about the pathological process, the bases

and consequences, including bad news. E51
Elaborate a diagnostic orientation and establish a reasoned action strategy, evaluating the results of the history and physical examination, as well as the subsequent results of the indicated complementary examinations. E40
Formulate hypotheses and collect and critically assess information for problem solving following the scientific method. T06
Indicate the most appropriate therapy for the most prevalent acute and chronic processes, as well as for terminally ill patients. E43
Indicate the basic diagnostic techniques and procedures and analyze and interpret the results to better specify the nature of the problems. E39
Obtain and prepare a clinical history that contains all the relevant information, structured and focused on the patient, taking into account all age groups, sex, cultural, social and ethnic factors. E36
Carry out a general physical examination and by systems, appropriate to the patient's age and sex, in a complete and systematic way and a mental assessment. E37
Recognize their role in multiprofessional teams, assuming leadership when appropriate, both for the provision of health care and in interventions for health promotion. E10
Recognize and act in situations that put life in immediate danger and those others that require immediate attention. E41

Learning outcomes (listed according to degree report)

Anticipate and contrast information to make decisions correctly.
Demonstrate a basic level of research skills.
Demonstrate, in the professional activity, a critical, creative and research-oriented point of view. Describe the affectation by organs and systems of the locomotor system, of blood diseases, of the cardiocirculatory system, of the digestive system, respiratory system, infectious diseases, endocrine, nervous, genitourinary systems and the elderly.
Describe the main pathological situations of the locomotor system, the blood, the organs of the cardiocirculatory system, the digestive system, the respiratory system, infectious diseases, the endocrine systems, the nervous system, the genitourinary system and of the old man
Describe the main pathological situations of nutrition.
Detail the steps and procedures to follow to communicate bad news.
Design the treatment in the main pathologies of the blood and hematopoietic system, the cardiocirculatory system, the digestive system, the respiratory system, infectious diseases, the endocrine system, the nervous system, the nervous system, the nephrogenitourinary system and retroperitoneal, of the elderly and of the locomotor system.
Give information in an understandable and prudent way, including preventive measures to avoid contagion and the spread of the disease.
Carry out an adequate physical examination for the main pathologies of the blood and hematopoietic system, of the cardiocirculatory system, of the digestive system, of the respiratory system, of infectious diseases, of the endocrine system, of the nervous system, of the nephrogenitourinary system and retroperitoneum, of the elderly and of the locomotor apparatus.
Explain the mechanisms by which disease affects the structure and function of the human body.
Explain the multidisciplinary intervention during the patient care process.
Express the most likely diagnosis in the main pathologies of the blood and hematopoietic system, of the cardiovascular system, of the digestive system, of the respiratory system, of infectious diseases, of the endocrine system, of the nervous system, of the nervous system, of the system nephrogenitourinary and retroperitoneal, of the elderly and of the locomotor system.
Formulate hypotheses and collect and critically evaluate information for problem solving following the scientific method.
Identify the basics of palliative medicine.

Identify the tumor disease, its diagnosis and management.
Identify the pathologies of the immune system, their diagnosis and their management.
Indicate the appropriate complementary examinations for the diagnosis of the main diseases of the blood and hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, infectious diseases, the endocrine system, the nervous system, the nephrogenitourinary system and retroperitoneal, of the elderly and of the locomotor system.
Inform the patient, adequately and with as much information as possible, about the state of health, the

diagnostic steps, complementary examinations and treatments.
Perform basic and advanced life support maneuvers.
Carry out a history that guides the diagnosis of the main diseases of the blood and hematopoietic system, the cardiocirculatory system, the digestive system, the respiratory system, infectious diseases, the endocrine system, the nervous system, the nephrogenitourinary system and retroperitoneum, of the elderly and of the locomotor apparatus.
Assess the changes in clinical parameters at different ages.

Competences

- Demonstrate basic research skills.
- Demonstrate understanding of the manifestations of the illness in the structure and function of the human body.
- Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
- Establish a diagnostic approach and a well thought-out strategy for action, taking account of the results of the anamnesis and the physical examination, and the results of the appropriate complementary tests carried out subsequently.
- Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.
- Give the patient and/or accompanying persons the relevant information about the disease process, its bases and consequences, including bad news, in an appropriate way.
- Indicate the basic diagnosis techniques and procedures and analyse and interpret the results so as to better pinpoint the nature of the problems.
- Indicate the most suitable treatment for the most prevalent acute and chronic processes, and for the terminally ill.
- Obtain and prepare a patient record that contains all important information and is structured and patient-centred, taking into account all age and gender groups and cultural, social and ethnic factors.
- Perform a general and a system-by-system physical examination appropriate to the patient's age and sex, in complete and systematic way, and a mental evaluation.
- Recognise and take action in life-threatening situations and others that require an immediate response.
- Recognize one's role in multi-professional teams, assuming leadership where appropriate, both for healthcare provision and for promoting health.

Learning Outcomes

1. Anticipate and compare information for good decision-making.
2. Assess modifications to clinical parameters in the different age groups.
3. Demonstrate basic research skills.
4. Demonstrate, in professional activity, a perspective that is critical, creative and research-oriented.
5. Describe the effects on all organs and systems of diseases of the blood, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the genitourinary system, infectious pathologies and diseases of the elderly.
6. Describe the main pathological situations of nutrition.
7. Describe the main pathological situations of the musculoskeletal system, the blood, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the genitourinary system, infectious pathologies and diseases of the elderly.
8. Design the treatment for the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
9. Explain multidisciplinary intervention during patient care.
10. Explain the mechanisms by which illness affects the structure and function of the human body.
11. Formulate hypotheses and compile and critically assess information for problem-solving, using the scientific method.

12. Give patients the maximum possible information about their health, diagnostic steps, complementary examinations and treatments in an appropriate way.
13. Identify the fundamental principles of palliative medicine.
14. Identify the pathologies of the immune system and the diagnosis and management of these.
15. Identify tumour diseases, and the diagnosis and management of these.
16. Indicate the complementary examinations for diagnosing the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
17. Inform with caution and clarity, including measures to prevent the spreading of disease.
18. Perform a suitable physical examination for the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
19. Perform basic and advanced life support manoeuvres.
20. State the most probable diagnosis for the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.
21. Write a report giving guidance on diagnosing the main infectious diseases, diseases of the blood, of the elderly, and of the hematopoietic system, the cardiovascular system, the digestive system, the respiratory system, the endocrine system, the nervous system, the renal and genitourinary system, the retroperitoneal system and the musculoskeletal system.

Content

Endocrinology: Surgical doctor

Endocrine system:

Fundamentals of Medical Endocrinology and Endocrine Surgery. Diseases of the anterior pituitary and hypothalamus. Neurohypophysis and pineal diseases. Thyroid and parathyroid gland diseases. Diseases of the adrenal glands (cortex and medulla). Endocrinological diseases of the reproductive function. Endocrinological Oncology.
Multiglandular syndromes of an autoimmune nature.
Metabolism:

Diabetes Mellitus and hypoglycemia. Hyperlipidaemias and other alterations of lipoprotein metabolism. Metabolic syndrome and cardiovascular risk. Alterations of bone and mineral metabolism.
Nutrition:

Nutritional risk assessment. Obesity, anorexia and malnutrition.
Diet therapy of the most common diseases. Artificial nutrition: enteral nutrition and parenteral nutrition.

Theory

Diseases of the anterior pituitary and hypothalamus I.
Diseases of the neurohypophysis
Diseases of the adenohypophysis II. Functional tests.
Diseases of the thyroid gland (I) (physiological bases, , thyroiditis, hypothyroidism, myxedematous coma, thyroid nodules)
Diseases of the thyroid gland (II) (Hyperthyroidism. Thyrotoxic crisis, Thyroid carcinoma)
Diseases of the thyroid gland (III) (Thyroid surgery)
Diseases of the parathyroid glands (hyperparathyroidism, hypoparathyroidism) and bone metabolism
Parathyroid gland surgery
Diseases of the adrenal gland (I) (physiological bases, adrenal insufficiency, hypoaldosteronism, congenital adrenal hyperplasia, autoimmune pluriglandular disease, incidentaloma, adrenal carcinoma)

Diseases of the adrenal gland (II) (Cushing's syndrome, hyperaldosteronism, pheochromocytoma, paraganglioma
Diseases of the adrenal gland (III) (Adrenal surgery)
Diabetes mellitus (I) (Diagnostic criteria, Classification; pathophysiology of type 1 diabetes, ,
Diabetes mellitus (II). (Physiopathology of type 2 diabetes, Insulin secretion and resistance; glycemic control, dietary treatment, exercise and healthy habits; oral agents and insulin therapy)
Diabetes mellitus (III). Clinic, diagnosis and treatment of diabetic microangiopathy (retinopathy, nephropathy) and diabetic neuropathy. Diabetic dermopathy. Hypertension and diabetes. Diabetic heart disease. Coronary heart disease and diabetes. Cerebrovascular disease and diabetes. Peripheral vascular disease. diabetic foot
Diabetes mellitus (IV). (Acute complications of diabetes mellitus. Non-ketotic hyperosmolar crisis. Ketoacidosis. Hypoglycemia).
Diabetes mellitus V: continuous glucose monitoring, insulin pumps, automatic insulin infusion control systems
Morbid obesity and associated morbidity. Bariatric surgery
Dyslipidemias I (Classification of dyslipidemias. Hypertriglyceridemia. Hypercholesterolemia. Mixed hyperlipidemias)
Dyslipidemias II Treatment
Endocrinology of reproduction I (Male and female hypogonadism. Late-onset male hypogonadism and menopause).
Endocrinology of reproduction II. Hirsutism, hyperandrogemism, virilization
Neuroendocrine tumors of the gastrointestinal and pancreatic tract. Multiple Endocrine Neoplasia. (Genetic diagnosis; clinic and treatment).
Nutrition and diet therapy
enteral nutrition
parenteral nutrition

Clinical simulation (N=1). List of eligible topics (among others):

Thyroid nodule: fine needle aspiration (FNA)
Recent diagnosis DM 1
obesity
Hyperthyroidism
Treatment of diabetic ketoacidosis
Classes with simulation methodology will be implemented in each UDH depending on teaching possibilities.

Clinical case seminars (N=18). List of eligible topics based on clinical cases:

Thyroid nodule
Approx. thyroid
BUT
Functional tests
Pituitary pathology. Panhypopituitarism
Endocrinological effects of immune checkpoint inhibitors
Endocrinology of aging
Thyroid ultrasound
Gender identity disorders
gestational diabetes
MIR questions
Graves' orbitopathy
Hospitalized diabetic patient
Diagnosing process and initiation of treatment DM 1
Interpretation of the continuous glucose record
Obesity surgery
Sd autoimmune polyglandular I and II
Thyroid and parathyroid surgery
Cardiovascular risk assessment
Endocrine disruptors
Diabetic retinopathy
Hypercorticism Central vs ectopic Cushing
Endocrinopathies and pregnancy

Adrenal surgery
Automatic insulin infusion control systems
Enteral nutrition
Nutritional status assessment
Parenteral nutrition

Neurology Neurosurgery:

Theoretical program

1. Headaches: Concept, definition, epidemiology, pathophysiology, clinic and classification-diagnostic criteria of the different primary headaches.

Migraine, tension headache, trigeminal-autonomic headaches.

Secondary headaches. Intracranial hypertension syndrome, neuralgia.

Therapeutic management of headaches.

Acute, preventive, chronic treatment. Pharmacological groups.

2. Vascular Pathology:

Ischemia: Transient ischemic attack (TIA), cerebral infarction

Lacunar infarction - Pseudobulbar syndrome

Hypertensive encephalopathy

Venous pathology

Subarachnoid - parenchymal hemorrhages

Vascular pathology of the marrow

3. Epilepsy: Introduction. Definitions. Epidemiology. Etiology Pathophysiology Pathological anatomy.

Classification: Crisis. syndromic

Diagnosis: Complementary tests EEG, TAC, MRI

Treatment: Medical (Drugs). surgical

Differential diagnosis: Syncope. pseudocrisis

4. Infectious pathology:

Meningitis - CSF characteristics: Acute, subacute, Chronic, Viral, Bacterial, Chemical, parasitic, Fungal

encephalitis

Polioencephalitis - Leukoencephalitis - Panencephalitis

Slow viral infections

5. Myelin diseases: Concept, definitions

Multiple Sclerosis: Clinical: symptoms, signs, evolution, prognosis

Complementary tests: PL - RM - PEV

Clinical diagnostic criteria. variants

Background treatment of the outbreak

Symptomatic treatment

Concepts: Encephalomyelitis, leukodystrophies and other demyelinations.

6. Dementia: Concept, epidemiology, social impact. Physiopathology, pathological anatomy, molecular bases, genetics, etiology.

Primary: Alzheimer, Pic, Lewy, corticobasal, frontotemporal.

Secondary: stroke, hydrocephalus, others

Clinical picture, complementary tests.

Diagnosis - Treatment. Prophylaxis

7. Movement disorders:

Parkinson's disease

Parkinsonian syndromes

Tremor - Dyskinesias: Chorea - Ballismus - Dystonia - Tics - Athetosis.

8. Toxic Deficiency Metabolic Pathology:

Encephalopathies: Metabolic - Deficiency - Toxic - Teratogenic.

Metabolism disorder; liver uremic glucose - water - electrolytes

alcoholism

Vitamin deficiencies: B1 (Beri Beri / Wernicke Korsakof)- B3 (pellagra) - B6 - B12 - folic.

Toxic: Organic. inorganic Drugs, substances, abuse

Neurotoxins: Animals - Insects - Marine Plants - Physical Agents

9. Myelopathies Ataxias:

The major spinal cord syndromes. Diseases of the marrow

Ataxias: Genetic studies

Medical treatment - rehabilitation

10. Neuromuscular Pathology: Introduction, examination, EMG indications

Motor neuron diseases

Mononeuropathies - plexopathies - radiculopathies

Polyneuropathies: Acquired - hereditary - Immunomediated

Diseases of the muscle union

Acquired hereditary myopathies - Immunomediated

Neurosurgery

1. Introduction to neurosurgery. The syndrome of intracranial hypertension: etiology, pathophysiology and treatment.

2. Tumors of the central nervous system (I). Epidemiology and classification. WHO classifications. Neuroectodermal tumors of glial lineage (gliomas). Comprehensive approach to malignant tumors of the CNS.

3. Tumors of the central nervous system (II). Benign tumors of the central nervous system. Meningiomas and schwannomas. Concept of radiosurgery and its indications

4. Hemorrhagic cerebrovascular accidents. Epidemiology. Spontaneous subarachnoid hemorrhage and spontaneous intraparenchymal hematomas.

5. Cranioencephalic trauma I (TBI-I). Epidemiology, biomechanics, pathophysiology and types of injuries, clinical evaluation, diagnostic and therapeutic protocol. Scales for evaluating the severity and neurological sequelae in the patient with a TBI.

6. Cranioencephalic trauma II (TBI-II). Neuromonitoring, diagnostic protocol and treatment guidelines.

7. Hydrocephalus and changes in the dynamics of the cerebrospinal fluid. Etiology, clinical manifestations, diagnosis and treatment. Normal pressure hydrocephalus. Benign intracranial hypertension (pseudotumor cerebri)

Clinical simulation

The classes with simulation methodology will be implemented in each UDH depending on the teaching possibilities, with the intention of including a class on a medical topic of neurology and another with content corresponding to neurosurgery.

Activities and Methodology

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
SIMULATION PRACTICES (PCSA)	3	0.12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
THEORY	52	2.08	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
WORKSHOPS	23	0.92	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Type: Supervised			
PERSONAL STUDY / READING OF ARTICLES / REPORTS OF INTEREST	91	3.64	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21

MEDICINE DEPARTMENT (ECTS 5.25 = 131.25h)

Neurology (1.75 ECTS = 43.75 h)

Theory: 7 p.m

PSCA: 1 H

Endocrinology: (3.5 ECTS = 87.5 h)

Theory: 10 h

WED: 4 h

PCSA: 1 hour

SURGERY DEPARTMENT (1.75 ECTS = 43.75h)

Neurosurgery (1.25 ECTS = 31.25 h)

Tea: 8 h

SUN: 5 h

PSCA: 1

Surgery of endocrinological pathology (0.5 ECTS = 12.5 h)

Theory: 3 h

SCC: 2h

Exceptionally and according to the criteria of the responsible teaching staff, the available resources and the current health situation in the different Teaching Units, part of the content corresponding to the theoretical lessons, practicals and seminars may be taught face-to-face or virtually.

According to the criteria of the responsible teaching staff and the resources available in each teaching unit, part of the content corresponding to the theoretical lessons and seminars may be taught and evaluated in the simulation classrooms with the corresponding methodology

Note: 15 minutes of a class will be set aside, within the calendar established by the center/degree, for students to fill in surveys to evaluate the performance of the teaching staff and to evaluate the subject/module.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Assessment

Continous Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Seminars and/or clinical cases: Objective tests: Written evaluations: extended questions, restricted questions, Oral evaluations, practical cases and problem solving.	30	3	0.12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21
Theory: Multiple choice tests: Written assessments using objective tests: Essay tests: written free text questions	70%	3	0.12	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12,

13, 14, 15,
16, 17, 18,
19, 20, 21

This subject does not provide the single assessment system

The evaluation system will be based on a theoretical part (70% of the final mark) and a part with the rest of the evaluation activities (30% of the final mark).

For the theoretical part (70%)

2 partial theoretical exams of an eliminatory nature will be programmed, one corresponding to each specialty of the subject (endocrinology and neurology). The exam will consist of a minimum of two typologies that may be:

Multiple choice theory test questions with 5 possible answers, only one true and incorrect answers will subtract 0.25 points
Multiple-choice clinical case test questions with 5 possible answers, only one true and incorrect answers will subtract 0.25 points
Short answer questions with free text
For the rest of the evaluation activities (30%)

ENDOCRINOLOGY

Seminars evaluation (30%)

1. Clinical cases discusion related with seminars
2. Short questions related with seminars

NEUROLOGY

Seminars evaluation (15%): short questions related with seminars

Clinical cases discusion (15%)

Final score

The final grade is the weighted average of the theoretical knowledge (70%) and the evaluation of the seminars (30%). It will not be possible to make the average between the theoretical evaluation and the evaluation of seminars, if a minimum score of 4/10 is not obtained in both parts.

The final mark of MIC IV will be the average of the partial marks of neurology and endocrinology. In order to obtain the average for the subject, each of the two parts must have been passed separately. If a specialty is suspended at the end of the school year, the entire subject must be recovered (neurology and endocrinology). The student who has not passed the midterm exams may take the final exam. Students who have not passed the subject through partial exams and who on the day of the final exam do not appear in the exam of the parts not passed, will be qualified as "NOT EVALUABLE".

Bibliography

Endocrinologia

Harrison's endocrinology 4th Edition

https://bibcercador.uab.cat/permalink/34CSUC_UAB/cugbhl/alma991010760034806709

Goodman's Basic Medical Endocrinology, 5th Edition (4ed. 2009)

https://bibcercador.uab.cat/permalink/34CSUC_UAB/cugbhl/alma991010400155306709

Neurologia

Zarranz. Neurología. Elsevier. 2018.

https://bibcercador.uab.cat/permalink/34CSUC_UAB/cugbhl/alma991000621599706709

Victor y Adams. Principios de Neurología. Mc Graw Hill. 2017. (2020)

https://bibcercador.uab.cat/permalink/34CSUC_UAB/cugbhl/alma991010526756206709

Bradley y Daroff. Neurología Clínica. Elsevier. 2022. (Edició 2010, en paper)

Neurocirurgia

Joaquim, A. F., Ghizoni, E., Tedeschi, H., & Ferreira, M. A. T. (2019). Fundamentals of neurosurgery : a guide for clinicians and medical students. Springer Nature Switzerland AG. *(no disponible al catàleg* UAB*)*

Software

This subject has not need an specific software

Language list

Information on the teaching languages can be checked on the CONTENTS section of the guide.