UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Anatomy 2 B

2425-1-H4101D002-H4101D009M

Aims

The objectives of the course are to complete the knowledge of nervous system anatomy and of the major neural pathways, and to provide understanding of special senses, mainly ear and eye.

Teachnig will include reference to topographic, radiologic, and clinical anatomy.

Practical activities using models (also virtual 3D) and clinical case simulations will be used to reach the teaching objectives.

Contents

The primary goal of the course is to provide a good knowledge of the organization of the nervous system (and special senses), required for a correct physical examination and understanding of the diseases pathogenesis.

Detailed program

NERVOUS SYSTEM

Description of the general organization of the nervous system, of the different structures componing the central nervous system and of the organization and distribution of the peripheral nerves: see ANATOMY 2A

AUTONOMIC NERVOUS SYSTEM

General organization of the autonomic nervous system and its main division in two parts, sympathetic and

parasympathetic. Afferent and efferent nerve fibers. Preganglionic and postganglionic fibers. Neurotransmitters involved. Autonomic ganglia. Large autonomic plexuses.

Anatomical, physiological and pharmacological differences between sympathetic and parasympathetic divisions. Sympathetic division: sympathetic trunks and ganglia, rami communicantes. Parasympathetic division: cranial and sacral components, cranial nerves involved. Functions of the autonomic nervous system.

The enteric nervous system

Some important autonomic innervation: eye, salivary and lacrimal glands, urinary bladder, gastrointestinal tract, heart, medulla of suprarenal gland, genital organs, skin.

MAJOR NEURAL PATHWAYS

Spinal and medial lemniscal tracts ; spinocerebellar tracts; lateral and medial descending motor systems; cerebellar and basal ganglia motor control; olfactory, gustatory, visual, auditory and vestibular systems. Parallel basal ganglia circuits. Diffuse projection systems. Medial longitudinal fasciculus.

Description of the organization, course and relations of each of these pathways, their origin, termination and synaptic stations.

CLINICAL NEUROANATOMY

Central nervous system
Anatomic basis of some common central nervous system diseases: ischemic brain injuries, cerebral hemorrhages, cerebral malformations, hydrocephalus, space-occupying lesions, cerebral herniations.
Consciousness and its disorders.
Mirror neurons.

Peripheral nervous system
Examples of clinical syndromes related to lesions of the roots, nerve plexuses and spinal nerves and their anatomo-functional basis.

Examples of clinical syndromes related to lesions of the nuclei and fibers of the cranial nerves and their anatomo-functional basis.

***SPECIAL SENSES**

The eye. Coats of the eyball. Eyelids. Lacrimal apparatus. Blood supply and innervation of the eye.
The ear. External ear. Middle ear (tympanic cavity). Internal ear (Labyrinth). Blood supply and innervation of the ear.

Prerequisites

College-level scientif knowledge

Teaching form

Frontal lessons and seminars. Interactive and problem-solving laboratories and lessons with clinical case

simulations.
Virtual dissection by using the 3D Anatomage Table

Textbook and teaching resource

For textbooks and teaching resources see General Syllabus of "Human Anatomy and Histology"

Semester

annual

Assessment method

Oral examination at the end of the Course.

See General Syllabus of "Human Anatomy and Histology" for details

Office hours

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Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION | GENDER EQUALITY | REDUCED INEQUALITIES