

**LIST OF PRACTICE TOPICS ON NEUROLOGY AND NEUROSURGERY FOR 4 COURSES  
STUDENTS OF THE MEDICAL FACULTY FOR THE AUTUMN SEMESTER**

**1. Motor system and motor disorders.**

1. Corticospinal (pyramidal) tract.
2. Classification of reflexes. Reflex arcs. Deep and superficial and pathological reflexes (techniques for eliciting).
3. The characteristic and significance of pathological reflexes (foot, hand, axial).
4. Voluntary movements disorders: paresis, paralysis. Signs of central paralysis.
5. Signs of flaccid paralysis.
6. Syndromes of corticospinal tract lesion ( precentral gyrus, corona radiata, internal capsule, brainstem, spinal cord, spinal roots, plexuses and peripheral nerves lesion).
7. Extrapyramidal system. Anatomy, physiology, functions.
8. Parkinson's syndrome.
9. Hyperkinetic syndrome. Types of hyperkinesia.

**2. Sensory system and its disorders.**

1. Reception, sensation, perception. Pathways of deep sensitivity.
2. Pathways of superficial sensitivity.
3. Types of sensory disorders. Examination of sensory system.
4. Syndromes of sensory tracts lesions (peripheral, spinal, cerebral).
5. Sensitive ataxia. Segmental-dissociated type of sensory disorder.
6. Brown – Sequard Syndrome.
7. **Symptoms of tension(Lasegue, Matskevich, Wasserman).**
8. Cerebellum. Anatomy, function. Anterior and posterior spino-cerebellar tracts.
9. Cerebellar ataxia: types, symptoms, methods of examination.

**3. Cranial nerves. Methods of examination and symptoms of lesion. Instrumental methods of diagnostics of neurological diseases.**

1. Olfactory nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
2. Optic nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
3. Oculomotor nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
4. Vegetative innervation of the eye. Pupil reflex arc. Horner's syndromes, Pty syndrome.
5. Trochlear and abducens nerves. Anatomy, physiology, methods of examination, symptoms of lesion.
6. The trigeminal nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
7. X-ray radiography of cranium and spine, computer-assisted tomography, magnetic resonance imaging (MRI) positron emission tomography, subtraction selective angiography: their importance in the diagnosis of neurological, neurosurgical diseases and injuries.
8. Ultrasound diagnosis in neurology and neurosurgery: ultrasound examination of the brachiocephalic arteries and nerve trunks. Transcranial Doppler. Echoencephalography.
9. Neurophysiological research methods (electroencephalography, electroneuromyography, evoked potentials).

**4. Cranial nerves. Methods of examination and symptoms of lesion. Brainstem. Alternating syndromes. Meninges, cerebrospinal fluid, meningeal syndrome.**

1. Facial nerve. Anatomy, physiology, methods of examination. Symptoms of facial nerve damage at the different levels.
2. Central and peripheral facial paralysis. Etiology, differential diagnosis, treatment.
3. Anatomy of the vestibular analyzer. Symptoms of a lesion. Symptoms of vestibular ataxia.
4. Anatomy and function of the auditory analyzer. Methods of examination. Symptoms of a lesion.
5. Glossopharyngeal nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
6. Vagus nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
7. Accessory nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
8. Hypoglossal nerve. Anatomy, physiology, methods of examination, symptoms of lesion.
9. Bulbar and pseudobulbar syndrome. Etiology, symptoms and diagnostics.
10. Alternating syndromes in midbrain and pons lesions: Weber, Miyar – Gubler and Foville's s,

Wallenberg – Zakharchenko, Jackson syndromes.

11. Anatomy of the brain and spinal cord meninges. Cerebrospinal fluid circulation and resorption. Characteristics of normal cerebrospinal fluid.

12. Lumbar puncture. Indications, contraindications, complications.

13. Meningeal syndrome, meningism. Etiology, symptoms.

**5. Cerebral hemispheres and higher cortical functions. Topical diagnosis of spinal cord lesions. Blood supply of the brain and a spinal cord.**

1. Anatomy and physiology of the frontal, temporal, parietal, occipital cerebral cortex.

2. Agnosia, apraxia. Types, symptoms.

3. Types and symptoms of speech disorders (aphasia, dysarthria, alalia, mutism).

4. Structural and functional mechanisms of memory. Amnesia and its types.

5. The scale of quantitative changes of consciousness: deafening, sopor, coma (moderate, deep, terminal). Glasgow Coma Scale.

6. Syndrome of complete transverse lesion of the upper cervical spinal cord (C1 – C4).

7. Syndrome of complete transverse lesion of the cervical spinal cord (C5 – Th2).

8. Syndrome of complete transverse lesion of the thoracic spinal cord (Th3 – Th12).

9. Syndrome of complete transverse lesion of the lumbar spinal cord (L1 – S2).

10. Syndrome of an epiconus (S1 – S2), a cone (S3 – S5), and a horse tail (L2 – S5) of a spinal cord lesion.

11. Blood supply of the brain. Arterial circle of cerebrum (circle of Willis), its physiological significance.

12. Spinal cord blood supply.

13. Examination of patients with diseases of the nervous system. Topical, differential and clinical diagnosis and its substantiation.

**6. Brain and spinal cord tumors. Purulent and parasitic diseases.**

1. Prevalence and classification brain and spinal cord tumors.

2. Main neurological syndroms in brain tumors: initial (focal) and secondary (intracranial hypertension, dislocation).

3. Closed (occlusive) and open (areresorptive) hydrocephalus. Etiology, pathogenesis, symptoms, diagnosis, treatment.

4. Symptoms of brain tumors with localization in the frontal, temporal, parietal, occipital lobes

5. Tumors of the chiasmatic-sellar and subtentorial regions. Symptoms, diagnosis, treatment.

6. Principles, facilities and results of the surgical treatment. Radiotherapy, chemotherapy, symptomatic treatment.

7. Extramedullary spinal cord tumors. Classification, clinic, diagnostics, treatment.

8. Intramedullary spinal cord tumors. Classification, clinic, diagnostics, treatment.

9. Brain tumors in children. Metastatic brain and spinal cord lesions.

10. Neurocysticercosis. Etiology, clinic, diagnosis, treatment. Bruns syndrome.

11. Neurotoxoplasmosis. Etiology, clinic, diagnosis, treatment.

12. Echinococcosis. Etiology, clinic, diagnosis, treatment.

13. Brain abscess. Etiology, pathogenesis, clinic, diagnosis, surgical treatment.

*Computer testing for general neurology and topical diagnostics.*

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and neurosurgery Department with  
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