

Elective In Physiology

1. Basics of animal handling and research

Name of Block	Block 1
Name of Elective	Basics of animal handling and research.
Department	Physiology
Name of Supervisor	Dr. Shikha Gautam, Professor, Department of Physiology, HIMSR, New Delhi.
Name of co-supervisor	Dr. Aparajita Bhatnaagar, Assistant Professor, Department of Physiology, HIMSR, New Delhi.
Number of students	Upto 05
Learning objectives of elective	1. To understand the importance and ethical aspects of animal research. 2. To acquire basic knowledge about animal handling. 3. To help a trainee gain knowledge and skills in animal research.
Expected Outcome	At the end of the elective, students should be able to: • Explain the role of animal experimentation in research. • Know the ethical aspects of animal experimentation. • Follow the correct methodology for disposal of biomedical waste generation during animal experimentation. • Perform basic animal anthropometrical techniques. • Perform recording of biological signals like Blood Pressure, ECG and Heart Rate in rat model with assistance. • Assist in cannulation of carotid artery of rat. • Describe the routes of drug administration in rats and calculation of doses. • Describe the physiological basis of animal models of few diseases like heart failure, pre-eclampsia etc.
Assessment	1. Viva. 2. Seminar.
Log book	Regular logbook entry of daily activities.

Elective In Physiology

2. Cardiac Autonomic Function Tests

Name of Block	Block 1
Name of Elective	Cardiac Autonomic Function Tests.
Department	Physiology
Name of Supervisor	Dr. Perveen Akhter, Associate Professor, Department of Physiology, HIMSR, New Delhi.
Name of co-supervisor	Dr. Manvi Gupta, Assistant Professor, Department of Physiology, HIMSR, New Delhi.
Number of students	Upto 05
Learning objectives of elective	1. To help trainees acquire basic knowledge about cardiac autonomic function tests. 2. To help a trainee develop skills to perform and interpret cardiac autonomic tests
Expected Outcome	At the end of the posting, the student should be able to: • Describe Cardiac electrophysiology. • Obtain a history relevant to cardiac autonomic function tests. • Describe the application of cardiac autonomic function tests and heart rate variability. • Describe and perform cardiac autonomic function tests. • Report and interpret cardiac autonomic function tests and heart rate variability
Assessment	1. Viva. 2. Seminar.
Log book	Regular logbook entry of daily activities.

Elective In Physiology

3. Basics of Neurophysiology with special emphasis on Nerve Conduction Study(NCS) and Electromyography(E.M.G)

Name of Block	Block 1
Name of Elective	Basics of Neurophysiology with special emphasis on Nerve Conduction Study(NCS) and Electromyography(E.M.G)
Department	Physiology
Name of Supervisor	Dr. Iqbal Alam, Professor and Head, Department of Physiology, HIMSR, New Delhi.
Name of co-supervisor	Dr. Sehar Mushtaq Kanyu, Assistant Professor, Department of Physiology, HIMSR, New Delhi.
Number of students	Upto 05
Learning objectives of elective	• To understand the physiological basis of peripheral nerve conduction and muscle electrical activity. • To learn the principles and methodology of performing NCS and EMG. • To identify normal versus abnormal nerve conduction parameters. • To interpret EMG waveforms and understand their diagnostic relevance. • To develop research aptitude using electrophysiological recordings for disease modelling and functional assessment.
Expected Outcomes	By the end of the elective, the student should be able to: • Describe the physiological principles behind NCS and EMG studies in humans. • Perform and record motor and sensory nerve conduction studies for: - Upper limb: - Median nerve – motor and sensory. - Ulnar nerve – motor and sensory. - Lower limb: - Tibial nerve – motor - Peroneal nerve – motor and sensory - Sural nerve – sensory • Perform basic EMG recordings and analyse EMG parameters such as area under curve, amplitude, duration, recruitment pattern and interference pattern. • Recognize deviations seen in common neuromuscular disorders (eg – neuropathies, myopathies, motor neuron disease and radiculopathy) • Appreciate the application of these techniques in clinical diagnosis, rehabilitation and neuroscience research.
Assessment	• Viva-voce. • Seminar.

Log book	Regular logbook entry of daily activities.
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