



The Physiology PG Lecture series for the year 2025, a collaborative activity by the Physiology departments of Velammal Medical College Hospital & Research Institute, Madurai, Madurai Medical College, Vinayaka Mission Kirupananda Variyar Medical College, Salem and Sri Ramachandra Institute of Higher Education was on the topic “**Instruments & Techniques in Physiology**”. The lecture series this year spanned from 01.12.2025 to 27.03.2026.

A total of 17 lectures were delivered by eminent physiologists and clinicians from across India via online mode. This year we had a total of 509 registrations which included postgraduates in Physiology, Faculty and MSc graduates in Medical Physiology. The lectures were scheduled for either on Mondays between 02.00PM to 03.00PM or on Saturdays between 11.00AM to 12.00PM and each session began with pre-test questionnaire and concluded with post-test questionnaire.

All the sessions were well received by the audience and most of the PGs felt happy to have attended this lecture series as most of the topics were important questions for their exams.

Sl No	Topic	Faculty Name	Date
1	Evoked Potentials	Dr. Navpreet Mann Professor, Dept of Physiology, Army College of Medical Sciences, Delhi	01.12.2025
2	Polysomnography	Dr. A. Subhasis Das, Professor & Head,	06.12.2025



		Dept of Physiology, PIMS, Puducherry	
3	Echocardiography Holter Monitoring	Dr. S. A. Saravana Cardiologist, VMCH & RI, Madurai	15.12.2025
4	Impulse Oscilometry	Dr. Irfan Ismail Ayub Professor & Head, Dept of Respiratory Medicine SRMCRI, Chennai.	16.02.2026
5	Ergography, VO2 Max, Stadiometer, CFFF & BIA	Dr. K. N. Maruthy Professor, Department of Physiology, PESIMSR, Kuppam.	21.02.2026
6	Nerve Conduction Study & latest updates	Dr. Bhuvaneshwari Rajendran Senior Consultant Department of Clinical Neurophysiology and Neurosciences Kauvery Hospital, Chennai	23.02.2026
7	ECMO	Dr. B. Manikandan Professor & Head Anaesthesia and Critical Care, Velammal Speciality Hospital	28.02.2026
8	Updates in Artificial Reproductive Techniques	Dr. G. Kavitha Professor & Head Dept of Reproductive Medicine, VMCH & RI	02.03.2026
9	Karyotyping	Dr. N. Leelavathy Professor Dept of Anatomy East Point College of Medical Sciences and Research Center, Bengaluru	02.03.2026
10	DLCO EBUS Bronchoscopy	Dr. P. Prem Ananth Professor & Head Dept of Respiratory Medicine, VMCH & RI.	28.03.2026
11	PET Scan	Dr. C. N. B. Harisankar Nuclear Medicine Physician MMHRC, Madurai	07.03.2026



12	Ophthalmoscope Tonometer	Dr. Manju R Pillai, Medical Consultant Glaucoma Services, Aravind Eye Hospital, Madurai	09.03.2026
13	Electro- Oculography Electroretinography	Dr. Rupa AnjanaMurthy, Medical Consultant, Paediatric and Adult Strabismus Department, Aravind Eye Hospital, Madurai	09.03.2026
14	Intraoperative Brain Monitoring	Dr. A. R. Prabu Raj Professor, Department of Neurosurgery, NIMHANS, Bengaluru	16.03.2026
15	Functional MRI	Dr. G. Rajalakshmi Preethi Professor Dept of Radiology, VMCH & RI	16.03.2026
16	Fractional Flow Reserve Swan Ganz Catheter Systolic Timed Intervals	Dr. Senthil Murugan Cardiologist VMCH & RI, Madurai.	23.03.2026
17	Patch Clamping Technique	Dr. Sathya Subramani Senior Professor Christian Medical College - Vellore	27.03.2026



Department of Physiology, Velammal Medical College Hospital & Research Institute, Madurai



Dr. Senthil Murugan Ramasamy

❖ 11 Publications in reputed indexed international journals

❖ Recipient of AASAAN '24 Best Medical Teacher Award



Dr. G. Rajalakshmi Preethi

❖ Professor, Department of Radiodiagnosis, Velammal Medical College & Research Institute, Madurai.

❖ MBBS

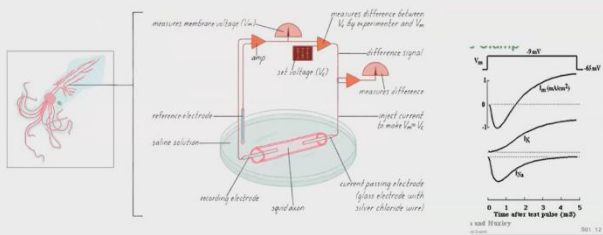
❖ Government Stanley Medical College, Chennai

❖ MD (Radiodiagnosis)

❖ Vardhman Mahavir Medical College & Safdarjung Hospital, New Delhi

H and H used the double electrode technique
A voltage-measuring electrode and a current passing electrode (which clamped the voltage)

TWO-ELECTRODE VOLTAGE CLAMP EXPERIMENTAL SET UP



Manipulation of Bronchoscope



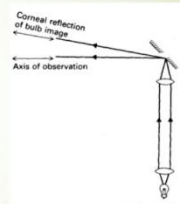
Flexion



Extension

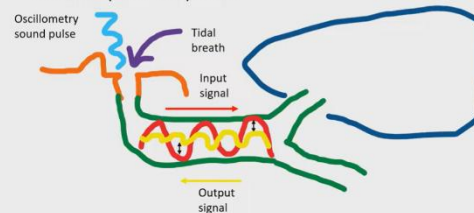
Optics of Direct Ophthalmoscope

- The instrument consists of a system of lenses which focus light from an electric bulb on to a mirror where a real image of the bulb filament is formed.
- The mirror reflects the emitted light in a diverging beam which is used to illuminate the patient's eye.
- Reflected rays from patients retina refracted by patients crystalline lens become parallel and enters into the observed eye through the mirror hole and the observer views the illuminated eye.
- The image of the bulb is formed just below the hole so that its corneal reflection does not lie in the visual axis of the observer.



Signal output: Reactance (X)

- Measures *dynamic elastic* property of the respiratory system (airway, lung tissue and chest wall elasticity, ventilation heterogeneity and gas trapping)
- Oscillometry derived reactance property: measures the change in output signal in the 'out-of-phase' component



M MODE



Dr. G. Kavitha

❖ Publications

❖ National - 5

❖ International - 8

❖ Is an invited speaker at various specialty regional and National conferences.

❖ She has been instrumental in setting up the IVF/ART Centre at Velammal Specialty Hospital, Madurai