

### DATE | TIME

- March 21, 2024
- 8.5 hours

### PLACE

- Convento de São Francisco, Coimbra | Sala Sofia C2B

### WORKSHOP OBJECTIVES

- Describe the basic concepts of electroencephalography (EEG) and its applications in the operating theatre;
- Interpret EEG signals and recognise the different patterns;
- Discuss the benefits of EEG monitoring in anaesthesiology practice;
- Appraise the implementation of EEG monitoring in the operating theatre;
- Familiarize anaesthesiologists with the use of EEG to optimize patient outcomes during surgery;
- Provide hands-on experience and interactive sessions for participants to enhance their skills in EEG interpretation.

### WORKSHOP OUTLINE

|              |   |
|--------------|---|
| 08:30-09:00h | <b>I. WELCOME AND INTRODUCTION</b> (0.5 hours)<br>Welcome introduction to the course<br>Introduction to the Safe Brain Initiative   |
| 09:00-10:00h | <b>II. FUNDAMENTALS OF EEG INTERPRETATION</b> (1 hour)<br>Overview of electroencephalography (EEG)<br>Basics of EEG waveform analysis<br>Common EEG patterns and their significance<br>Understanding the effects of anaesthesia on EEG<br>Recognizing and interpreting artifacts in EEG recordings                                    |
| 10:00-10:30h | <b>III. PRACTICAL CONSIDERATIONS FOR EEG MONITORING</b> (0.5 hours)<br>Equipment and setup for EEG monitoring in the operating theatre<br>Electrode placement and impedance checks<br>Technical considerations for obtaining reliable EEG recordings<br>Troubleshooting common issues and challenges in EEG monitoring                |
| 10:30-10:45h | Coffee break  |
| 10:45-12:30h | <b>IV. CLINICAL APPLICATIONS OF EEG IN ANAESTHESIOLOGY</b> (1.5 hours)<br>EEG as a tool for anaesthesia level monitoring<br>Spectral Analysis<br>Detection of cerebral harm (burst suppression, ischemia, epilepsy)<br>Nociception in the EEG   |
| 12:30-13:30h | Lunch   |
| 13:30-14:30h | <b>V. OPTIMIZATION OF PATIENT OUTCOMES WITH EEG</b> (1 hour)<br>EEG-guided anaesthetic management strategies<br>Impact of EEG monitoring on intraoperative awareness and depth of anaesthesia<br>Role of EEG in preventing postoperative cognitive dysfunction<br>Case studies and real-world examples of improved outcomes using EEG |
| 14:30-15:30h | <b>VI. EEG 2.0</b> (1 hour)<br>Advancements in EEG technology and its potential impact on anaesthesiology<br>The relevance of the alpha waves<br>Other advanced patterns<br>EEG in the pediatric population<br>Sleep and anaesthesia from the EEG perspective   |
| 15:30-18:00h | <b>VII. HANDS-ON SESSIONS AND CASE DISCUSSIONS</b> (2.5 hours)<br>Small group activities for EEG interpretation practice<br>Interactive discussions on challenging EEG cases<br>Q&A sessions with expert faculty<br>Feedback and guidance for participants' EEG interpretation skills   |
| 18:00-18:30h | <b>VIII. WRAP-UP AND CONCLUSION</b> (0.5 hour)<br>Summary of key learnings from the workshop<br>Test<br>Final Q&A session and participant feedback<br>Closing remarks and certificates of participation   |

### FACULTY

Prof. Doctor Finn Radtke | Dr. Francisco Lobo | Dr. Francisco Valente | Dr. Gonçalo Durães  
 Prof. Doctor Joana Berger-Estilita | Dra. Marta Ribeiro | Dr. Rer. Nat. Matthias Kreuzer  
 Dra. Patrícia Santos | Dr. Pedro Amorim | Prof. Doctor Sara Gomes | Prof. Doctor Sérgio Vide

### COORDINATION

Prof. Doctor Sérgio Vide