



EDRA extended Syllabus / Curriculum

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This document contains a brief outline of the required knowledge, attitudes, behaviour, and skills European Diploma in Regional Anaesthesia & Acute Pain Management (EDRA) examination applicants need.

It is the examinee's personal responsibility to maintain a professional portfolio and logbook. Examinees must also ensure that their 'Workplace Assessments' for individual units of training take place, by reminding those responsible at the appropriate time. It is expected that, by the end of the training, an examinee will have good overall knowledge and thorough understanding of regional anaesthesia and will have acquired the necessary skills to practice regional anaesthesia, as shown in the workplace assessment.

The examiners may request these documents for review.

Workplace training objectives

Regional techniques are integral components of anaesthesia and it is inappropriate to expect that examinees will become competent in every possible block technique, although they must be competent in all the generic aspects of block performance.

Examinees should be able to obtain consent from patients; create a safe and supportive environment in the operating theatre; position patients and instruct and use assistants properly; to establish central neuraxial blocks (spinal, epidural and combined spinal-epidural blockade), peripheral and other nerve blocks; use sedation appropriately; and know the criteria for the safe discharge of patients from the recovery room to their homes.

Theoretical knowledge

Anatomy

Surface anatomy

- Landmarks for peripheral regional anaesthesia
- Landmarks for central neuraxial blocks

Head and neck

Upper limb

Thorax and abdomen

Pelvis and lower limb

Spine and axial skeleton

Peripheral and central nervous system
Sympathetic nervous system
Anatomy of the obstetric patient

Ultrasound anatomy

Relevant sono-anatomy of the most common peripheral blocks (interscalene, supra- and infraclavicular, axillary, elbow and wrist blocks; femoral / saphenous, obturator, proximal and distal sciatic, popliteal and ankle blocks).

Basic statistics

- Data display
- Mean and standard deviation
- Populations and samples
- Sensitivity and specificity
- Positive and negative predictive value
- Likelihood ratio
- Odds ratio
- Relative risk / absolute risk
- Statements of probability and confidence intervals
- Statistical significance
- Difference between means: type I and type II errors and power
- Difference between percentages and paired alternatives
- The t- and chi-square tests, ANOVA
- Wilcoxon sign-rank test / Wilcoxon rank-sum test
- Correlation (Pearson and Spearman) and simple / multiple regression
- Survival analysis

Perioperative and acute pain

- Understanding of the pathophysiologic changes of the central and peripheral nervous system
- Understanding of the different types of pain (e.g. nociceptive vs. neuropathic)
- Lower back pain / failed spine surgery
- Sympathetically maintained pain
- Pain management issues in pregnant patients
- Postoperative surgical pain

Pharmacology

Local anaesthetic agents

Analgesics

Sedatives (including propofol and dexmedetomidine)

Non-steroidal anti-inflammatory drugs (NSAID's)

Gabalin gabapentin / pregabalin

Adjuvant analgesics e.g. ketamine / dexamethasone / clonidine

Vasoactive drugs (adrenaline, ephedrine, phenylephrine)

Physics

Nerve conduction

Neurostimulation

- Rheobase, chronaxie
- Cathode, anode

Ultrasound

- Typical artefacts (enhancement, attenuation, etc.)

Physiology

Structure and function (interaction between anatomy “-muscle-” and physiology “-nerve-”)

Specific characteristics of the newborn and the elderly

Physiology of the obstetric patient

Central, peripheral, sympathetic and parasympathetic nervous system

Cardiovascular and pulmonary systems

Gastroenterological and renal systems

Coagulation and bleeding disorders

Pathophysiology

Influence of common diseases, such as hypertension, coronary artery disease, COPD, CNS disorders, polyneuropathy, diabetes, etc., on the practice of regional anaesthesia

Surgery

Understanding of the relevance of regional anaesthesia techniques on the most common surgical procedures (e.g., rotator cuff repair, shoulder-, hip-, knee arthroplasty, hallux valgus, thoracotomy, laparotomy, etc.)

Understanding of the most common obstetric procedures (labour and delivery, C-section, etc.)

Equipment

Needles – design / application and limitations

Catheters – through needle / over needle / stimulating / ultrasound enhanced

Peripheral nerve stimulators

- mA, milliseconds, Frequency
- Cathode, anode

Ultrasound machines

- knobology
- ultrasound physics
- Artefacts

Continuous infusion devices – elastomeric / CI devices / PCRA devices

Miscellaneous – needle guides / pressure monitors/ percutaneous nerve location devices / spinal safety connectors (2012) / GPS, etc.

Practical Aspects of Training

Procedures

RA techniques applicable to surgery, anaesthesia and trauma of, or analgesia for

- Head and neck: (superficial cervical plexus and deep cervical plexus)
- Upper limb: (interscalene, supraclavicular, infraclavicular, axillary, isolated peripheral nerve blocks, wrist blocks and Bier’s blocks)
- Thoracic spine and chest: (intercostal, paravertebral and thoracic epidural)
- Lumbar spine and abdomen and perineum: (spinal, lumbar epidural, abdominal wall blocks, ilioinguinal, iliohypogastric, penile block and caudal); central blocks for obstetric patients
- Lower limb: (lumbar plexus, femoral, obturator, saphenous, sciatic, popliteal and tibial, ankle block)
- Miscellaneous: (ophthalmic blocks, intravenous regional anaesthesia (IVRA), local infusion

analgesia (LIA), catheter techniques and continuous /combined spinal techniques)

Although it is not necessary for the candidate to have performed all known RA techniques, it is expected that he or she will have a theoretical knowledge of most techniques and will have performed or observed the most commonly used techniques prior to presenting for EDRA Part II.

All Part II candidates will be expected to demonstrate all peripheral nerve blocks on a model with ultrasound AND nerve stimulation (landmark, muscle twitches and correlation to block-success) techniques.

Currently, neuraxial techniques (epidural / spinal / caudal) and paravertebral blocks with ultrasound will not be expected to be demonstrated on a model, but will certainly still be examined by landmark techniques.

Complications and Side Effects

Early recognition and management of:

- Local anaesthetic toxicity (all causes)
- Intravascular injection and haemorrhage

Subdural block

Total spinal anaesthesia

Seizure management

Cardiac arrest

Pneumothorax and lung injury

Nerve damage (central and peripheral)

- Work-up of nerve damage (appropriate tests and timepoints)

Epidural abscess / haematoma / cord injury or compression

Failed or incomplete block

- Rescue blocks

Nausea and vomiting

Shivering

Post-operative pain

Regional anaesthesia and acute compartment syndrome

Breakout / rebound pain

Tourniquet pain

Sedation

All examinees are expected to have good knowledge of pharmacology, indications, and the methods of and practical management of sedation techniques. This includes monitoring, early recognition of complications, and their management.

Skills

Assessment and preparation of the patient for regional anaesthesia, including discussion of anaesthetic options (i.e., regional versus general).

Management of the patient receiving a regional block during surgery (whether awake or as part of a 'balanced' anaesthetic technique) and during labour.

Management of the patient receiving regional techniques in the postoperative period, including

liaison with surgeons, acute pain teams, and ward staff.
Management of an incomplete, failed, or failing block.
Treatment of complications in an expedient and appropriate manner.
Knowledge of current ALS-compliant resuscitation guidelines, including the use of intralipid in local anaesthetic toxicity.
Developing and organising a regional anaesthetic service.
Benefits, practical application, and maintenance of peripheral nerve / plexus catheters.

Attitudes and behaviour

Provides explanations of regional techniques in a way that patients can understand.
Understands patients' anxieties about regional techniques, especially the stress of undergoing surgery while conscious.
Recognises the need for communication with staff about the use of regional anaesthetic techniques.
Handles patients gently during performance of a regional block.
Meticulous attention to safety and sterility during performance of regional blocks.
Enlists help / advice from other professionals when appropriate.
Communicates a balanced view of the advantages, disadvantages, risks, and benefits of various forms of analgesia and anaesthesia appropriate to individual patients.
Attempts via conscientious care to recognise problems early.
Identifies priorities and seeks senior help early.
Obtains consent appropriately.
Keeps good records.
Communicates well with patients, parents, partners, carers, and other family members.

Calmness under pressure.

Timely assistance and prompt response to requests for analgesia
Awareness of local audits and remembers to self-audit
Keeps abreast of current regional anaesthesia literature.
Becomes involved in regional anaesthesia research where appropriate.

Sterility and Safety

Incidence / treatment and prevention of infection.
Maintenance of sterile practice in regional anaesthesia.

Specific Patient Groups

Trauma
Elderly
Obstetrics
Paediatrics
Obese