



e-Learning Anaesthesia

Integrated Anaesthesia Learning Portal

Curriculum

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1 Introduction to Anaesthesia

Total Number of Sessions 78

01 Anaesthesia the Specialty

Number of Sessions 3

01 Overall role of the anaesthetist

1_01_01 The anaesthetist and the theatre team

02 Principles of safe practice

1_02_01 Preparation and usage of equipment and drugs

1_02_02 General theatre conduct

02 Basic science

Number of Sessions 18

03 Anatomy essentials

1_03_01 The airway

1_03_02 Respiratory system

1_03_03 Heart and major vessels

04 Physiology essentials

1_04_01 Cardiovascular system

1_04_02 Respiratory system

1_04_03 Oxygen transport and consumption

1_04_04 Neuromuscular junction

1_04_05 Autonomic nervous system

05 Pharmacology essentials

1_05_01 Premedication drugs

1_05_02 IV anaesthetic agents

1_05_03 Inhalational anaesthetic agents

1_05_04 Peri-operative analgesics

1_05_05 Neuromuscular blocking agents

1_05_06 Local anaesthetics

1_05_07 Emergency drugs

1_05_08 IV fluids

06 Physics essentials

1_06_01 Gases and vapours

1_06_02 Electrical safety

03 Pre-operative management

Number of Sessions 8

07 Overview of pre-operative preparation and assessment

1_07_01 Purposes of pre-operative visiting

08 Pre-operative assessment relevant to anaesthesia

1_08_01 History and examination

1_08_02 Investigations, ASA grading

09 High risk groups and reasons why

1_09_01 Medical conditions 1: CVS and RS disease

1_09_02 Medical conditions 2: miscellaneous

1_09_03 High risk patients groups



10 General pre-operative measures and patient communication

- 1_10_01 General pre-operative measures
- 1_10_02 Risk and consent

04 Airway care

Number of Sessions 7

11 Airway assessment

- 1_11_01 Prediction of difficult airway
- 1_11_02 Airway obstruction

12 Airway management

- 1_12_01 Airway maintenance: facemask
- 1_12_02 Airway maintenance: LMA
- 1_12_03 Airway maintenance: tracheal tube 1
- 1_12_04 Airway maintenance: tracheal tube 2
- 1_12_05 Management of failed intubation

05 Principles of anaesthesia

Number of Sessions 23

13 General principles

- 1_13_01 Aims of anaesthesia
- 1_13_02 Sedation
- 1_13_03 Local / regional anaesthesia

14 Depth of anaesthesia

- 1_14_01 Stages of unconsciousness

15 Choice of anaesthetic technique

- 1_15_01 Airway choice
- 1_15_02 Ventilation choice

16 Overall sequence of events during 2 basic anaesthetic techniques

- 1_16_01 1: spontaneous breathing via LMA
- 1_16_02 2: ventilated via ETT

17 IV access

- 1_17_01 IV cannulation

18 Induction of anaesthesia

- 1_18_01 Pre-oxygenation
- 1_18_02 IV induction sequence
- 1_18_03 Rapid sequence induction

19 Maintenance of anaesthesia

- 1_19_01 Technique and drug selection
- 1_19_02 Maintenance drug control
- 1_19_03 Untoward events

20 Reversal of anaesthesia

- 1_20_01 Reversal and extubation
- 1_20_02 Transfer to recovery
- 1_20_03 Slow / failed recovery



21 Post-anaesthesia recovery

- 1_21_01 Overview of recovery
- 1_21_02 Airway maintenance, oxygen therapy
- 1_21_03 Analgesia and anti-emetics

22 Fluid balance

- 1_22_01 IV fluids
- 1_22_02 Haemorrhage and hypovolaemia

06 Equipment essentials

Number of Sessions 13

23 The anaesthetic machine

- 1_23_01 Gas supplies
- 1_23_02 Gas and vapour controls

24 Introduction to breathing systems

- 1_24_01 Breathing system components
- 1_24_02 Common breathing systems

25 Ventilators

- 1_25_01 Principles of IPPV
- 1_25_02 Ventilator settings and alarms

26 Miscellaneous

- 1_26_01 Filters, humidifiers and scavenging systems

27 Monitoring

- 1_27_01 ECG, blood pressure, SpO₂
- 1_27_02 Gases: O₂, CO₂, anaesthetic gases
- 1_27_03 Nerve stimulator and temperature

28 Pre-operative equipment check

- 1_28_01 Machine check sequence
- 1_28_02 Other anaesthetic equipment
- 1_28_03 Common equipment problems

07 Critical incidents and Resuscitation

Number of Sessions 5

29 Critical Incidents

- 1_29_01 Respiratory problems
- 1_29_02 Cardiovascular problems
- 1_29_03 Anaphylaxis

30 Advanced life support

- 1_30_01 Principles of ALS
- 1_30_02 Causes of peri-operative arrest

08 Postoperative care

Number of Sessions 1

31 Post-operative ward problems

- 1_31_01 Ward visit after major surgery



2 Consolidating basic clinical practice

Total Number of Sessions 164

01 Anaesthesia and Intercurrent Disease

Number of Sessions 50

01 Anaesthesia and cardiac disease

- 2_01_01 Clinical effects of anaesthetic techniques on the cardiac system
- 2_01_02 Clinical effects of anaesthetic drugs on the cardiac system
- 2_01_03 Other cardiac changes during anaesthesia
- 2_01_04 Assessment of exercise tolerance
- 2_01_05 Implications of cardiac drugs
- 2_01_06 Basic cardiac investigations
- 2_01_07 Preoperative echocardiography
- 2_01_08 Investigation of cardiac function
- 2_01_09 Ischaemic heart disease
- 2_01_10 Hypertensive heart disease
- 2_01_11 Left Ventricular impairment
- 2_01_12 Aortic stenosis
- 2_01_13 Other valve lesions
- 2_01_14 Atrial fibrillation
- 2_01_15 Pacemakers and implanted cardioverters
- 2_01_16 Conduction defects

02 Anaesthesia and respiratory disease

- 2_02_01 Clinical effects of anaesthesia on the respiratory system 1
- 2_02_02 Clinical effects of anaesthesia on the respiratory system 2
- 2_02_03 Upper and lower respiratory tract infections
- 2_02_04 Basic respiratory investigations
- 2_02_05 Lung function tests and the vitalograph
- 2_02_06 Asthma
- 2_02_07 Chronic Obstructive Respiratory Disease
- 2_02_08 Sleep apnoea

03 Anaesthesia and renal disease

- 2_03_01 Acute renal failure and the effects of anaesthesia on renal function
- 2_03_02 Chronic renal failure
- 2_03_03 Patient with a renal transplant

04 Anaesthesia and hepatic disease

- 2_04_01 Alcoholic liver disease
- 2_04_02 Anaesthesia for patients with hepatic impairment

05 Anaesthesia and endocrine disease

- 2_05_01 Diabetes mellitus for the anaesthetist
- 2_05_02 Diabetes mellitus: Pre-operative assessment
- 2_05_03 Diabetes mellitus: Peri-operative management
- 2_05_04 Thyroid disease
- 2_05_05 Adrenal disease and steroid replacement therapy

06 Anaesthesia and connective tissue disease

- 2_06_01 Rheumatoid arthritis



2_06_02 Ankylosing Spondylitis and SLE

07 Anaesthesia and haematological disease

2_07_01 Anaemia

2_07_02 Sickle cell disease and thalassaemia

2_07_03 Porphyria

2_07_04 Haemophilia

2_07_05 Antiplatelet drugs and platelet disorders

2_07_06 Anticoagulants and clotting disorders

08 Anaesthesia and neurological/muscle disease

2_08_01 Epilepsy

2_08_02 Myasthenia Gravis

2_08_03 Multiple Sclerosis and Myotonias

2_08_04 Spinal cord injury

2_08_05 Psychiatric disorders

2_08_06 Psychiatric medication

09 Anaesthesia in the Obese Patient

2_09_01 Pathophysiological changes in obesity

2_09_02 Anaesthetic implications of obesity

02 Preoperative Assessment

Number of Sessions

29

10 History

2_10_01 History: Important Principles

2_10_02 Drug Users and Anaesthetic Implications

11 Examination

2_11_01 Examination: Important Principles

2_11_02 Cardiovascular System

2_11_03 Respiratory System

2_11_04 Neurological System

2_11_05 Airway Assessment I

2_11_06 Airway Assessment II

12 Drug Therapy

2_12_01 Implications for the Anaesthetist

2_12_02 Steroids

13 Allergy and Anaesthetic Related Problems

2_13_01 Allergies including latex

2_13_02 Sux Apnoea

2_13_03 Malignant Hyperpyrexia

14 Investigations and Interpretation

2_14_01 ECG I

2_14_02 ECG II

2_14_03 ECG III

2_14_04 Normal Chest Xray

2_14_05 Normal Chest Xray II

2_14_06 Abnormal Chest Xray I



2_14_07	Abnormal Chest Xray II
2_14_08	Other Xrays
2_14_09	Abdominal Xrays
2_14_10	Simple CT / MRI scans
2_14_11	Haematological I
2_14_12	Haematological II
2_14_13	Biochemistry - Hyper/hypokalaemia
2_14_14	Biochemistry - Hyper/hyponatraemia
2_14_15	Biochemistry - Magnesium and Calcium
2_14_16	Biochemistry - Blood urea and Creatinine

03 Implications of Surgery on Conduct of Anaesthesia

Number of Sessions

20

15 Day Case Surgery

2_15_01	Day Case Surgery & Anaesthesia I
2_15_02	Day Case Surgery & Anaesthesia II
2_15_03	Day Case Surgery & Anaesthesia III

16 Emergency Surgery

2_16_01	General Principles
2_16_02	Preoperative Assessment & Preparation
2_16_03	Assessment of need for HDU/ICU care

17 Trauma

2_17_01	Trauma I
2_17_02	Trauma II
2_17_03	Trauma III
2_17_04	Trauma IV
2_17_05	Trauma V

18 Acute Abdomen

2_18_01	Acute abdomen: preparation
2_18_02	Acute abdomen: intraoperative management
2_18_03	Acute abdomen: postoperative care

19 Surgical Specialities

2_19_01	Anaesthesia for ear, nose and throat surgery
2_19_02	Anaesthesia for dental and maxillofacial surgery
2_19_03	Anaesthesia for gynaecological and laparoscopic surgery
2_19_04	Anaesthesia for orthopaedic surgery
2_19_05	Anaesthesia for plastic surgery
2_19_06	Anaesthesia for urological surgery

04 Preparation for Theatre

Number of Sessions

8

20 Preparation for Theatre

2_20_01	General principles of preparation for theatre
2_20_02	Consent I
2_20_03	Consent II
2_20_04	Assessment of Surgical & Anaesthetic Risk



21 Premedication

- 2_21_01 Role of the Preoperative Visit
- 2_21_02 Premedication Drugs
- 2_21_03 DVT Prophylaxis
- 2_21_04 Assessment & Causes of preoperative anxiety

05 Induction of Anaesthesia

Number of Sessions 14

22 Preparation prior to GA

- 2_22_01 Preparation to administer general anaesthesia

23 Intravenous Induction

- 2_23_01 Definition and conduct of general anaesthesia
- 2_23_02 Propofol: an overview
- 2_23_03 Thiopental: an overview
- 2_23_04 Etomidate, ketamine and the role of opioids

24 Inhalational Induction

- 2_24_01 Indications for inhalational induction
- 2_24_02 Conduct of inhalational induction
- 2_24_03 Sevoflurane, halothane and nitrous oxide

25 Anaphylaxis

- 2_25_01 Presentation and identification of anaphylaxis
- 2_25_02 Immediate management of anaphylaxis
- 2_25_03 Subsequent management of anaphylaxis

26 Advanced airway skills

- 2_26_01 Advanced techniques of intubation
- 2_26_02 Variants of the laryngeal mask airway
- 2_26_03 Emergency airway manoeuvres

06 Maintenance of General Anaesthesia

Number of Sessions 29

27 General Principles

- 2_27_01 Principles of maintenance of general anaesthesia
- 2_27_02 Volatile agents, breathing attachments
- 2_27_03 Intravenous techniques for maintenance
- 2_27_04 Overview of monitored sedation
- 2_27_05 Maintenance of temperature

28 Intraoperative Problems

- 2_28_01 Management of hyper- or hypocapnia
- 2_28_02 Management of hyper- or hypotension
- 2_28_03 Management of intraoperative arrhythmias

29 Monitoring

- 2_29_01 Essential monitoring for general anaesthesia
- 2_29_02 Further monitoring for general anaesthesia
- 2_29_03 Vigilance and anticipation of problems

30 Depth of anaesthesia

- 2_30_01 Basic principles of depth of anaesthesia



2_30_02 Systems for measuring depth of anaesthesia

2_30_03 Incidence and management of awareness

31 Muscle relaxation

2_31_01 Basic principles of neuromuscular blockade

2_31_02 Monitoring neuromuscular blockade

2_31_03 Reversal of neuromuscular blockade

32 Intermittent Positive Pressure Ventilation

2_32_01 Important principles of IPPV

2_32_02 Conduct of IPPV

2_32_03 Managing common problems in IPPV

33 Intra-operative analgesia and fluid management

2_33_01 Intra-operative analgesia

2_33_02 Overview of intravenous fluids

2_33_03 Fluid requirements in the surgical patient

2_33_04 Principles of red cell transfusion

2_33_05 Management of massive haemorrhage

34 Positioning

2_34_01 Overview of different surgical positions

2_34_02 Protection of the anaesthetised patient

35 Medicolegal aspects

2_35_01 Anaesthetic record-keeping

2_35_02 Handover protocol when changing anaesthetist mid-case

07 Postoperative and Recovery Care

Number of Sessions

9

36 Postoperative care

2_36_01 Safe handover of patient to recovery team

2_36_02 Basic principles of postop care and the analgesic ladder

2_36_03 Patient controlled analgesia

2_36_04 Post operative nausea and vomiting

37 Common problems in recovery

2_37_01 Failure of return of consciousness or neuromuscular function

2_37_02 Hypothermia, itch, and pain

2_37_03 Post extubation airway difficulties

2_37_04 Management of hypo- or hypertension

2_37_05 Management of rhythm problems or ischaemia

08 Infection Control

Number of Sessions

5

38 Health and safety

2_38_01 Universal Precautions and Cross Infection

2_38_02 HIV and Hep B Precautions

2_38_03 Needle Stick Injury

39 Antibiotics and sterilisation

2_39_01 Antibiotic Policies

2_39_02 Equipment Sterilisation



3 Critical Care

Total Number of Sessions 126

01 General principles

Number of Sessions 44

01 Recognition of the critically ill patient and role of intensive care

- 3_01_01 Predictors of critical illness and scoring systems
- 3_01_02 Outreach
- 3_01_03 Benefits of HDU/ICU and common causes of admission
- 3_01_04 Overview of organ support
- 3_01_05 Overview of monitoring in Critical Care
- 3_01_06 Severity scoring and outcome from ICU
- 3_01_07 The ICU record

02 Arterial cannulation and blood gas analysis

- 3_02_01 Indications and complications
- 3_02_02 Technique (and routes) of insertion
- 3_02_03 Arterial pressure monitoring
- 3_02_04 Blood gas analysis Respiratory disorders
- 3_02_05 Blood gas analysis Metabolic disorders II
- 3_02_06 Blood gas analysis Metabolic disorders I

03 Central venous cannulation

- 3_03_01 Indications and complications
- 3_03_02 Technique of insertion and routes
- 3_03_03 Ultrasound guided central venous access
- 3_03_04 Central venous pressure monitoring
- 3_03_05 Venous blood gases analysis

04 Ventilatory support

- 3_04_01 Oxygen administration
- 3_04_02 CPAP and NIV
- 3_04_03 Basic modes I
- 3_04_04 Basic modes II
- 3_04_05 Initial settings (post op)
- 3_04_06 Ventilation in ALI
- 3_04_07 Sedatives in ICU
- 3_04_08 Opiates/pain management in ICU
- 3_04_09 Muscle relaxants in ICU
- 3_04_10 Management of sedation in ICU
- 3_04_11 Complications of mechanical ventilation
- 3_04_12 Clinical problems during mechanical ventilation 1
- 3_04_13 Clinical problems during mechanical ventilation 2
- 3_04_14 Weaning from mechanical ventilation
- 3_04_15 Monitoring respiratory function in ICU

05 Tracheostomy

- 3_05_01 Indications and technique
- 3_05_02 Management of tracheostomy
- 3_05_03 Types of tracheostomy tube



- 3_05_04 Insertion/change of tracheostomy tube
- 06 General care of the ICU patient**
- 3_06_01 Thromboprophylaxis in critically ill patients
- 3_06_02 Prevention of stress ulceration
- 3_06_03 Common electrolyte disorders (Na)
- 3_06_04 Common electrolyte disorders (K, Mg PO4)
- 3_06_05 Diabetes and control of blood sugar
- 3_06_06 Principles of nutrition in the critically ill
- 3_06_07 Chest X Ray interpretation in ICU

02 Clinical Problems in ICU

Number of Sessions 41

07 Management of the post op patient

- 3_07_01 Indications for post op admission
- 3_07_02 Surgical considerations in ICU
- 3_07_03 Management of hypertension
- 3_07_04 Post operative respiratory failure

08 Hypotensive Patient

- 3_08_01 Assessment/resuscitation/differential diagnosis
- 3_08_02 Classification of Shock
- 3_08_03 Cardiac output monitoring I
- 3_08_04 Cardiac output monitoring II
- 3_08_05 Vasoactive agents (inotropes)
- 3_08_06 Vasoactive agents (vasodilators and vasoconstrictors)

09 Cardiogenic Shock

- 3_09_01 Management of Cardiogenic shock
- 3_09_02 Myocardial infarction
- 3_09_03 Heart failure
- 3_09_04 Recognition of cardiac arrhythmias
- 3_09_05 Management of arrhythmias

10 Hypovolaemic shock

- 3_10_01 Recognition
- 3_10_02 Management
- 3_10_03 Fluids in hypovolaemic shock I
- 3_10_04 Fluids in hypovolaemic shock II
- 3_10_05 Fluids in hypovolaemic shock III
- 3_10_06 Dilutional coagulopathy

11 Anaphylactic shock

- 3_11_01 Clinical presentation and mechanisms
- 3_11_02 Treatment

12 The Oliguric Patient

- 3_12_01 Assessment, Differential diagnosis and investigation
- 3_12_02 Prevention and treatment of acute renal failure
- 3_12_03 Renal replacement therapies
- 3_12_04 Drugs and renal failure



13 The Breathless Patient

- 3_13_01 Hypoxaemic respiratory failure
- 3_13_02 Hypercapnic respiratory failure
- 3_13_03 Tension pneumothorax
- 3_13_04 Acute asthma
- 3_13_05 COPD/NIV
- 3_13_06 Community acquired pneumonia
- 3_13_07 Hospital acquired pneumonia/VAP
- 3_13_08 Pulmonary embolism

14 Clinical Scenarios

- 3_14_01 Interactive clinical case 1
- 3_14_02 Interactive clinical case 2
- 3_14_03 Interactive clinical case 3
- 3_14_04 Interactive clinical case 4
- 3_14_05 Interactive clinical case 5
- 3_14_06 Interactive clinical case 6

03 Sepsis and MOF

Number of Sessions 14

15 Patho-physiology

- 3_15_01 Definitions of sepsis
- 3_15_02 Pathophysiology of sepsis and MOF
- 3_15_03 Microbiology of common infections
- 3_15_04 Nosocomial infections and Infection Control

16 Organ Failure

- 3_16_01 ALI/ARDS
- 3_16_02 Septic Shock
- 3_16_03 Renal Failure
- 3_16_04 Liver failure
- 3_16_05 Haematological failure

17 Sepsis management

- 3_17_01 Assessment and differential diagnosis
- 3_17_02 Sepsis resuscitation bundle
- 3_17_03 Surviving sepsis campaign guidelines
- 3_17_04 Vasoactive agents in sepsis
- 3_17_05 Principles of antibiotic use

04 Unconscious patient

Number of Sessions 15

18 General principles

- 3_18_01 Assessment/resuscitation/differential diagnosis
- 3_18_02 Examination of the unconscious patient (AVPU, GCS)
- 3_18_03 Causes and Investigation of coma
- 3_18_04 Care of the unconscious patient
- 3_18_05 Management of seizures



19 Head injury

- 3_19_01 Principles of the management of head injury
- 3_19_02 Mechanisms and effects of raised intra-cranial pressure
- 3_19_03 Methods of preventing the 'second insult' to the brain
- 3_19_04 Anaesthesia in the HI patient
- 3_19_05 Cervical spine injury

20 Brain stem death

- 3_20_01 Brain stem death
- 3_20_02 Organ donation and care of the organ donor
- 3_20_03 Breaking bad news

21 Poisoning

- 3_21_01 General principles
- 3_21_02 Management of common specific poisons

05 Trauma

Number of Sessions 12

22 Primary and secondary survey

- 3_22_01 The primary survey
- 3_22_02 The secondary survey
- 3_22_03 Airway management in trauma
- 3_22_04 Management of spinal injuries
- 3_22_05 Emergency surgical airway

23 Life threatening injuries

- 3_23_01 Circulatory shock in trauma
- 3_23_02 Life-threatening thoracic injury
- 3_23_03 Seldinger pleural drain insertion
- 3_23_04 Surgical pleural drain insertion
- 3_23_05 Life threatening abdominal injury

24 Patient transfer

- 3_24_01 Principles of safe transfer of patients
- 3_24_02 Portable monitoring systems and ventilators



4a Obstetrics

Total Number of Sessions 27

Number of Sessions 27

01 Pregnancy and labour

- 4a_01_01 Physiological and anatomical changes during pregnancy
- 4a_01_02 Specific pharmacology of pregnancy and labour
- 4a_01_03 Anatomy/physiology/pharmacology of fetal circulation
- 4a_01_04 Physiology of labour

02 Assessment and consent

- 4a_02_01 Pre-operative assessment and preparation
- 4a_02_02 Informed consent in obstetric anaesthesia

03 Labour analgesia

- 4a_03_01 Labour analgesia: alternatives to regional analgesia

04 Regional analgesia & anaesthesia

- 4a_04_01 Regional analgesia 1 Anatomy, equipment, drugs
- 4a_04_02 Regional analgesia 2 Technique - epidural/CSE analgesia
- 4a_04_03 Regional analgesia 3 Technique - spinal/CSE anaesthesia
- 4a_04_04 Regional analgesia 4 Risks and benefits
- 4a_04_05 Regional analgesia 5 Managing common complications
- 4a_04_06 Regional analgesia 6 Managing serious complications

05 General anaesthesia in obstetrics

- 4a_05_01 General anaesthesia 1: Technique
- 4a_05_02 General anaesthesia 2: Risks and benefits
- 4a_05_03 General anaesthesia 3: Managing serious complications

06 Choice of anaesthetic technique

- 4a_06_01 Basic obstetrics
- 4a_06_02 Choice of anaesthetic technique

07 Serious problems in obstetric anaesthesia

- 4a_07_01 Lessons from CEMACH
- 4a_07_02 Cardiac arrest in pregnancy
- 4a_07_03 Recognising the sick mother
- 4a_07_04 Major haemorrhage in obstetrics
- 4a_07_05 Preeclampsia and eclampsia
- 4a_07_06 Thromboembolism
- 4a_07_07 Morbid obesity

08 Postnatal issues

- 4a_08_01 Breastfeeding and anaesthesia

09 Anaesthesia during pregnancy outside the delivery suite

- 4a_09_01 Anaesthesia in early pregnancy, and for incidental surgery



4b Paediatrics

Total Number of Sessions 71

Number of Sessions 71

01 Developmental anatomy

4b_01_01 Developmental anatomy

02 Developmental physiology

- 4b_02_01 Adaptation to extrauterine life
- 4b_02_02 Changes in major organs, blood and biochemistry
- 4b_02_03 Development of the pain system
- 4b_02_04 Development of the neuromuscular junction

03 Developmental pharmacology

- 4b_03_01 Body composition and growth
- 4b_03_02 PK, PD, PG differences between children and adults
- 4b_03_03 Volatile agents
- 4b_03_04 Intravenous agents
- 4b_03_05 Neuromuscular blocking drugs
- 4b_03_06 Local anaesthetics
- 4b_03_07 Opioids
- 4b_03_08 NSAIDS & paracetamol

04 Paediatric Resuscitation

- 4b_04_01 Paediatric & Neonatal Basic Life Support
- 4b_04_02 Advanced paediatric life support
- 4b_04_03 APLS or EPLS Course

05 Stabilisation of the Sick or Injured Child

- 4b_05_01 Head injury
- 4b_05_02 Multiply injured child
- 4b_05_03 Burns
- 4b_05_04 Fractured femur
- 4b_05_05 Septic shock/ meningococcal septicaemia
- 4b_05_06 Airway problem

06 Safeguarding children

- 4b_06_01 Local procedures, RCPCH/RCoA/APA guidelines
- 4b_06_02 Level 1 child protection training module

07 Preparation for anaesthesia

- 4b_07_01 Behavioural & psychological aspects of managing children
- 4b_07_02 Preoperative assessment of the child patient
- 4b_07_03 Premedication including topical local anaesthesia

08 Paediatric Equipment

- 4b_08_01 Breathing systems, filters & humidification
- 4b_08_02 Airway devices, tracheal tubes & sizes
- 4b_08_03 IV & intraosseous equipment

09 Induction of anaesthesia

- 4b_09_01 Inhalational induction



4b_09_02 Intravenous induction

10 Maintenance of anaesthesia

4b_10_01 Spontaneous ventilation techniques

4b_10_02 Controlled ventilation techniques

4b_10_03 TIVA principles in children

4b_10_04 Recognition & management of MH

11 Analgesia

4b_11_01 Caudal epidural block

4b_11_02 Penile block

4b_11_03 Inguinal block

4b_11_04 Femoral, 3-in-1, fascia iliaca blocks

4b_11_05 Ring blocks, metacarpal and metatarsal blocks

4b_11_06 Infraorbital & Posterior auricular block nerve blocks

4b_11_07 LA infusion dosing regimens

4b_11_08 Safety, monitoring & LA toxicity in children

4b_11_09 Opioids: titration to analgesia

4b_11_10 Opioids: morphine infusions, PCA, NCA

4b_11_11 Opioids: monitoring, safety, adverse effects

4b_11_12 NSAIDs in children

4b_11_13 Paracetamol in children

12 Fluid & electrolyte management

4b_12_01 Calculations 1: blood volume, fluid & electrolyte deficits and requirements

4b_12_02 Calculations 2: blood volume, fluid & electrolyte deficits and requirements

4b_12_03 Maintenance fluids in the perioperative period

4b_12_04 Monitoring and titration of fluid therapy

4b_12_05 Blood and blood product therapy in children

13 Anaesthesia for children age >5y

4b_13_01 Herniotomy, orchidopexy, torsion of the testis

4b_13_02 Circumcision

4b_13_03 Appendicectomy & laparotomy

4b_13_04 Removal of foreign body

4b_13_05 Myringotomy & grommets

4b_13_06 Adenotonsillectomy & the bleeding tonsil

4b_13_07 Eyelid laceration repair, tear duct probing & EUA

4b_13_08 Strabismus correction

4b_13_09 Forearm fracture

4b_13_10 Fractured femur

4b_13_11 Burns debridement & dressing

4b_13_12 Derotation osteotomy

4b_13_13 Tendon transfer and release in cerebral palsy

4b_13_14 Upper and lower GI endoscopy

14 Postoperative care

4b_14_01 Recovery from anaesthesia & discharge criteria

4b_14_02 Postoperative analgesia: day cases and in-patients: the acute pain team

4b_14_03 Postoperative fluid management & antiemetic therapy



4c Anaesthesia in the elderly

Total Number of Sessions 29

Number of Sessions 29

01 Introduction to the Elderly

- 4c_01_01 Communication difficulties
- 4c_01_02 Cultural factors in dealing with the elderly
- 4c_01_03 Frailty : a description of elderly reserve
- 4c_01_04 End of life issues
- 4c_01_05 Assessing social support and planning discharge
- 4c_01_06 Consent and autonomy
- 4c_01_07 Do not resuscitate orders

02 Cardiovascular system

- 4c_02_01 The great vessels : arteriosclerosis
- 4c_02_02 The heart :diastolic dysfunction
- 4c_02_03 Autonomic dysfunction

03 Respiratory System

- 4c_03_01 Structural and volume changes in the lung
- 4c_03_02 Gas exchange in the elderly lung
- 4c_03_03 Control of ventilation

04 Nervous system

- 4c_04_01 Age related neurotransmitter changes
- 4c_04_02 Assessment of cognitive function
- 4c_04_03 Perioperative Cognitive Dysfunction (POCD)
- 4c_04_04 Degenerative brain disease: Parkinson's and Alzheimer's
- 4c_04_05 Age related brain changes
- 4c_04_06 Delirium and dementia
- 4c_04_07 Age related changes in MAC
- 4c_04_08 Pain and the sensory system : physiological and structural changes
- 4c_04_09 Neurotoxicity of anaesthetics in the elderly

05 Metabolic functions

- 4c_05_01 Renal Function
- 4c_05_02 Hepatic and gastrointestinal function
- 4c_05_03 Temperature control and hypothermia

06 Hip fractures

- 4c_06_01 The surgical management of hip fractures
- 4c_06_02 The preoperative management of hip fractures
- 4c_06_03 Comprehensive geriatric care in hip fracture management
- 4c_06_04 Anaesthesia for hip fractures



5a Pain

Total Number of Sessions 36

Number of Sessions 36

01 Anatomy of Nociceptive Pathway

5a_01_01 Pain pathways, peripheral to central

02 Neurophysiology of Nociceptive Pathway

5a_02_01 Modulation of the pain signal

5a_02_02 Plasticity in the nociceptive system

03 Pharmacological targets

5a_03_01 Peripheral NS

5a_03_02 Central NS

04 Psychology

5a_04_01 Aspects of acute pain

05 Diagnostic features of pain

5a_05_01 Nociceptive pain

5a_05_02 Visceral pain

5a_05_03 Neuropathic pain

06 Assessment of pain severity

5a_06_01 Acute pain: History, examination and simple uni-dimensional tools

5a_06_02 Persistent pain: History, examination and multi-dimensional tools

07 Physical treatments

5a_07_01 Simple procedures, counterstimulation

08 Pharmacology Treatments

5a_08_01 Step I: paracetamol

5a_08_02 Step I: NSAIDs/COXIBs

5a_08_03 Step I: inhalational analgesics

5a_08_04 Step I: appropriate clinical use of simple analgesics

5a_08_05 Step II-III: opioids - commonly available opioids

5a_08_06 Step II-III: opioids - principles of opioid treatment

5a_08_07 Step II: appropriate clinical use of weak opioid/paracetamol combinations

5a_08_08 Step III: admin techniques – IV bolus, PRN, infusion

5a_08_09 Step III: admin techniques – IV PCA

5a_08_10 Step III: admin techniques – PO, IM, SC, PR, S/L, inhaled

5a_08_11 Step III: admin techniques – epidural, intrathecal

09 Regional LA techniques

5a_09_01 Local anaesthetic agents

5a_09_02 Peripheral - wound infiltration and nerve blocks

5a_09_03 Peripheral - upper & lower limb

5a_09_04 Central - spinal, epidurals

10 Adjuvant Pharmacology for Neuropathic Pain

5a_10_01 Anti-depressants, anti-convulsants, others

11 Analgesia strategy: overview

5a_11_01 Multimodal analgesia



5a_11_02 Preventative vs. Pre-emptive analgesia

12 Acute Pain Service

5a_12_01 history, organisation & objectives

13 Clinical Pain Scenarios

5a_13_01 Elderly, cognitively impaired (blind, deaf), HDU/ITU

5a_13_02 Obstetric & paediatric analgesia

5a_13_03 Opioid users - abusers, chronic pain

5a_13_04 Renal/liver impairment, A/E, burns, sickle cell

5a_13_05 Post-operative: procedure specific



5b Regional Anaesthesia

Total Number of Sessions 27

Number of Sessions 27

01 Pharmacology

- 5b_01_01 The pharmacology of local anaesthetics
- 5b_01_02 The toxicology of local anaesthetics

02 Anatomy

- 5b_02_01 The clinical anatomy of the subarachnoid and epidural spaces
- 5b_02_02 The innervation of the trunk
- 5b_02_03 The innervation of the upper limb
- 5b_02_04 The innervation of the lower limb

03 Neuraxial techniques

- 5b_03_01 Indications and contraindications for/to spinals and epidurals
- 5b_03_02 Drugs used for neuraxial blocks
- 5b_03_03 Performing spinal and epidural injections (including caudal), and placing spinal and
- 5b_03_04 Complications of spinals and epidurals
- 5b_03_05 Managing continuous postoperative neuraxial analgesia

04 Peripheral nerve blocks

- 5b_04_01 Drugs used in peripheral nerve blocks
- 5b_04_02 Indications and contraindications for/to peripheral nerve blocks
- 5b_04_03 Intravenous regional anaesthesia
- 5b_04_04 Finding nerves: clicks, paraesthesiae, nerve stimulation, LORTS and ultrasound
- 5b_04_05 Performing safe peripheral nerve blocks
- 5b_04_06 Complications of peripheral nerve blocks
- 5b_04_07 Continuous regional analgesia – peripheral nerve catheters
- 5b_04_08 Sample upper limb block: coracoid brachial plexus block
- 5b_04_09 Sample lower limb block: femoral nerve block
- 5b_04_10 Trunk blocks: intercostal blocks and blocks for inguinal hernia repair

05 General considerations

- 5b_05_01 The past, present and future of regional anaesthesia
- 5b_05_02 Outcome and regional anaesthesia
- 5b_05_03 Consent for regional anaesthesia
- 5b_05_04 Sedation and general anaesthesia in combination with regional anaesthesia
- 5b_05_05 Practical regional anaesthesia I: which blocks for which operations?
- 5b_05_06 Practical regional anaesthesia II: managing failed or imperfect blocks



7a Anatomy

Total Number of Sessions 54

Number of Sessions 54

01 Respiratory system

- 7a_01_01 Mouth
- 7a_01_02 Nose and Pharynx
- 7a_01_03 Larynx, structure, innervation and blood supply
- 7a_01_04 Trachea, main bronchi, broncho-pulmonary segments
- 7a_01_05 Microstructure of the lungs, pleura
- 7a_01_06 Mediastinum and contents
- 7a_01_07 Diaphragm, accessory muscles of respiration, innervation
- 7a_01_08 Ribs and thoracic cage, clavicles
- 7a_01_09 Blood supply, innervation and lymph drainage of upper airway
- 7a_01_10 Differences in the child airway and lungs
- 7a_01_11 Deciduous and permanent dentition
- 7a_01_12 Interpretation of the normal X-ray
- 7a_01_13 Anatomical factors suggesting the difficulty of intubation

02 Cardiovascular system

- 7a_02_01 Heart, chambers, pericardium
- 7a_02_02 Blood supply (including endocardial perfusion)
- 7a_02_03 Conducting system
- 7a_02_04 Great vessels, main peripheral arteries and veins
- 7a_02_05 Blood supply of hand and foot
- 7a_02_06 Blood supply to the central nervous system
- 7a_02_07 Other Special circulations

03 Nervous system

- 7a_03_01 Macroscopic anatomy of the brain, CSF, meninges
- 7a_03_02 Spinal cord, major ascending and descending pathways
- 7a_03_03 Spinal meninges, subarachnoid and extradural space
- 7a_03_04 CSF and its circulation
- 7a_03_05 Spinal nerves, dermatomes, intercostal nerves
- 7a_03_06 Spinal nerves, dermatomes, intercostal nerves in the child
- 7a_03_07 Brachial plexus, nerve supply to the arm and hand
- 7a_03_08 Lumbosacral plexus, nerve supply to the leg and foot
- 7a_03_09 Autonomic nervous system, ganglia, plexi
- 7a_03_10 Cranial nerves, base of skull, trigeminal ganglion, stellate ganglion
- 7a_03_11 Globe of the eye
- 7a_03_12 Optic pathways, visual fields, motor and sensory innervation
- 7a_03_13 Bony orbit and extra-ocular contents
- 7a_03_14 Pain pathways in labour
- 7a_03_15 Pathways involved in chronic pain
- 7a_03_16 Generation of peripheral sensation

04 The abdominal viscera

- 7a_04_01 Macroscopic anatomy of the liver and biliary tract



- 7a_04_02 Microscopic anatomy of the liver and biliary tract
- 7a_04_03 Macroscopic anatomy of the kidney and urinary tract
- 7a_04_04 Microscopic anatomy of the kidney and urinary tract
- 7a_04_05 Macroscopic anatomy of the gastrointestinal tract
- 7a_04_06 Microscopic anatomy of the gastrointestinal tract
- 7a_04_07 Anatomy of the spleen and pancreas

05 Bone and joints

- 7a_05_01 Vertebral Column
- 7a_05_02 Cervical, thoracic, lumbar vertebrae, sacrum, sacral hiatus, ligaments
- 7a_05_03 Facial skeleton
- 7a_05_04 Bones and Joints of the upper and lower limbs
- 7a_05_05 Hazards of positioning and pressure areas

06 Surface Anatomy

- 7a_06_01 Antecubital fossa
- 7a_06_02 Neck and clavicular region
- 7a_06_03 Inguinal region, femoral triangle
- 7a_06_04 Landmarks for tracheostomy and cricothyrotomy
- 7a_06_05 Abdominal wall, suprapubic catheters, peritoneal lavage
- 7a_06_06 Surface anatomy of vertebral column in adult and child



7b Physiology

Total Number of Sessions 102

01 General Physiology

Number of Sessions 6

01 Homeostasis

7b_01_01 Organisation of the human body

02 Gene physiology

7b_02_01 Function of cells; genes and their expression 1

7b_02_02 Function of cells; genes and their expression 2

7b_02_03 Gene transcription and translation.

03 Cell membranes

7b_03_01 Cell membrane characteristics; receptors 1

7b_03_02 Cell membrane characteristics; receptors 2

02 Biochemistry

Number of Sessions 5

04 Cellular biochemistry

7b_04_01 Acid base balance and buffers 1

7b_04_02 Acid base balance and buffers 2

05 Enzymes and their function

7b_05_01 Cellular metabolism, enzymes

06 Ions and the body

7b_06_01 Cations and anions

7b_06_02 Cations and anions

03 Body Fluids

Number of Sessions 3

07 Starling's forces and the capillary

7b_07_01 Capillary dynamics and interstitial fluid

08 Osmolarity and tonicity

7b_08_01 Osmolarity: partition of fluids across membranes

7b_08_02 Lymphatic system and other circulatory fluids

04 Haematology and Immunology

Number of Sessions 7

09 Haemoglobin

7b_09_01 Red blood cells: haemoglobin and its variants

10 Blood groups

7b_10_01 Transfusion physiology 1

7b_10_02 Transfusion physiology 2

11 Coagulation

7b_11_01 Haemostasis and coagulation 1

7b_11_02 Haemostasis and coagulation 2

12 Immunology

7b_12_01 Immunity

7b_12_02 Allergy and Inflammatory Response



05 Muscle

Number of Sessions 7

13 Skeletal muscle

- 7b_13_01 Neuromuscular junction and transmission
- 7b_13_02 Action potential generation and its transmission
- 7b_13_03 Skeletal muscle contraction 1
- 7b_13_04 Skeletal muscle contraction 2

14 Smooth muscle

- 7b_14_01 Smooth muscle physiology 1
- 7b_14_02 Smooth muscle physiology 2
- 7b_14_03 Motor unit

06 Heart and Circulation

Number of Sessions 18

15 Cardiac muscle physiology

- 7b_15_01 Cardiac muscle contraction 1
- 7b_15_02 Cardiac muscle contraction 2
- 7b_15_03 The cardiac cycle 1
- 7b_15_04 The cardiac cycle 2

16 The ECG

- 7b_16_01 The electrocardiogram and arrhythmias 1
- 7b_16_02 The electrocardiogram and arrhythmias 2

17 Control of the CVS

- 7b_17_01 Regulation of cardiac function 1
- 7b_17_02 Regulation of cardiac function 2
- 7b_17_03 Regulation of cardiac function 3
- 7b_17_04 Control of cardiac output 1
- 7b_17_05 Control of cardiac output 2
- 7b_17_06 Control of systemic blood pressure 1
- 7b_17_07 Control of systemic blood pressure 2

18 The peripheral circulation

- 7b_18_01 Peripheral circulation 1
- 7b_18_02 Peripheral circulation 2
- 7b_18_03 Special circulations including 1
- 7b_18_04 Special circulations including 2
- 7b_18_05 Special circulations including 3

07 Renal Tract

Number of Sessions 6

19 Renal function

- 7b_19_01 Assessment of renal function 1
- 7b_19_02 Assessment of renal function 2
- 7b_19_03 Tubular function and urine formation, micturition

20 Acid-Base control

- 7b_20_01 Regulation of electrolyte and acid-base balance 1
- 7b_20_02 Regulation of electrolyte and acid-base balance 2



08 Respiration

Number of Sessions 13

21 O₂ and CO₂ Transport

- 7b_21_01 Gaseous exchange: O₂ and CO₂ transport
- 7b_21_02 Gaseous exchange: Hypoxia and hyper- and hypo-capnia
- 7b_21_03 Gaseous exchange: hyper- and hypo-baric pressures
- 7b_21_04 Function of haemoglobin in oxygen carriage
- 7b_21_05 CO₂ carriage in blood and acid-base equilibrium

22 Pulmonary mechanics

- 7b_22_01 Pulmonary ventilation: volumes, flows, dead space & preoxygenation
- 7b_22_02 Pulmonary ventilation: volumes, flows, dead space & preoxygenation
- 7b_22_03 Mechanics of ventilation: ventilation/perfusion relationships
- 7b_22_04 Mechanics of ventilation: effects of IPPV

23 Control of respiration

- 7b_23_01 Control of breathing
- 7b_23_02 Ventilatory failure and oxygen therapy
- 7b_23_03 Effects of anaesthesia on lung function
- 7b_23_04 Non-respiratory functions of the lungs

09 Nervous System

Number of Sessions 12

24 Nerve cell physiology

- 7b_24_01 Functions of nerve cells 1
- 7b_24_02 Functions of nerve cells 2

25 The nervous system

- 7b_25_01 The brain
- 7b_25_02 Autonomic nervous system

26 Reflex physiology

- 7b_26_01 Neurological reflexes 1
- 7b_26_02 Neurological reflexes 2
- 7b_26_03 Motor function: spinal and peripheral
- 7b_26_04 Special senses 1
- 7b_26_05 Special senses 2

27 Pain physiology

- 7b_27_01 Pain - peripheral and central mechanisms 1
- 7b_27_02 Pain - peripheral and central mechanisms 2
- 7b_27_03 Visceral pain and neuropathic pain

10 Liver

Number of Sessions 3

28 Liver physiology

- 7b_28_01 Functional liver anatomy and blood supply
- 7b_28_02 Metabolic and synthetic functions of the liver 1
- 7b_28_03 Metabolic and synthetic functions of the liver 2



11 Gastrointestinal

Number of Sessions 3

29 GUT physiology

- 7b_29_01 Gastric function
- 7b_29_02 Gut motility, nausea and vomiting
- 7b_29_03 Digestive functions,

12 Metabolism

Number of Sessions 9

30 Nutrition

- 7b_30_01 Nutrients: carbohydrates, fats, proteins 1
- 7b_30_02 Nutrients: carbohydrates, fats, proteins 2
- 7b_30_03 Metabolic pathways
- 7b_30_04 Hormonal control of metabolism

31 Special state physiology

- 7b_31_01 Common physiological alterations 1
- 7b_31_02 Common physiological alterations 2
- 7b_31_03 Common physiological alterations 3

32 Temperature

- 7b_32_01 Body temperature and its regulation 1
- 7b_32_02 Body temperature and its regulation 2

13 Endocrinology

Number of Sessions 6

33 Hormones

- 7b_33_01 Physiology of hormones
- 7b_33_02 Hypothalamic and pituitary function
- 7b_33_03 Adrenocortical hormones
- 7b_33_04 Adrenal medullary hormones
- 7b_33_05 Pancreas: insulin, glucagon and exocrine function
- 7b_33_06 Thyroid and parathyroid hormones and calcium homeostasis

14 Pregnancy

Number of Sessions 4

34 Physiology of the mother

- 7b_34_01 Physiology of pregnancy and labour 1
- 7b_34_02 Physiology of pregnancy and labour 2
- 7b_34_03 Functions of the placenta: placental transfer

35 Fetal physiology

- 7b_35_01 Materno-fetal circulation changes at birth



7c Pharmacology

Total Number of Sessions 108

01 Applied Chemistry

Number of Sessions 5

01 Organic Chemistry in Medicine

- 7c_01_01 Drugs as Organic Molecules: structural considerations
- 7c_01_02 Drugs as Organic Molecules: bonds within and between molecules
- 7c_01_03 Ionisation
- 7c_01_04 Molecules and membranes
- 7c_01_05 Isomers

02 Pharmacodynamics

Number of Sessions 19

02 How Chemicals Act as Drugs

- 7c_02_01 Introduction to mechanisms of drug action
- 7c_02_02 Non-specific Drug Actions

03 Drug-Receptor Interactions

- 7c_03_01 Agonists and Receptors
- 7c_03_02 Antagonists and Receptors
- 7c_03_03 Partial Agonists & Inverse Agonists
- 7c_03_04 Introducing Receptors as Proteins

04 Ion Channels

- 7c_04_01 Ligand-Gated Ion-Channels as Receptors
- 7c_04_02 Voltage-Gated Ion-Channels as Drug Targets

05 Transduction Systems

- 7c_05_01 GPCRs & G-Proteins
- 7c_05_02 Intermediary Messengers
- 7c_05_03 Non-GPCR mediated Transmembrane Signalling
- 7c_05_04 Nuclear Receptors

06 Regulation of transcription

- 7c_06_01 Enzymes as Drug Targets

07 Enzymes as drug targets

- 7c_07_01 Anticholinesterases
- 7c_07_02 Enzyme Induction & Inhibition

08 Unwanted Drug Actions

- 7c_08_01 Predictable Side Effects of Drugs
- 7c_08_02 Unpredictable Side Effects of Drugs
- 7c_08_03 Tolerance & Tachyphylaxis

09 Drug Interactions

- 7c_09_01 Ways in which Drugs Interact

03 Pharmacokinetics

Number of Sessions 26

10 Introduction to Pharmacokinetics

- 7c_10_01 What is Pharmacokinetics?



11 Absorption

- 7c_11_01 Routes of Administration & Absorption
- 7c_11_02 Bioavailability

12 Distribution & Re-distribution

- 7c_12_01 Oral Drug Administration
- 7c_12_02 Intravenous Drug Administration
- 7c_12_03 Inhalational Drug Administration
- 7c_12_04 Factors Affecting Drug Distribution
- 7c_12_05 Protein Binding
- 7c_12_06 Body Compartments

13 Elimination

- 7c_13_01 The Removal of Drugs from Plasma: Principles
- 7c_13_02 Elimination Unchanged: Excretion
- 7c_13_03 Principles of Drug Metabolism
- 7c_13_04 The Cytochrome P450 system
- 7c_13_05 Factors Affecting Hepatic & Renal Elimination

14 Pharmacokinetic Models

- 7c_14_01 Introduction to Pharmacokinetic Modelling
- 7c_14_02 The Simple One Compartment Model: bolus
- 7c_14_03 The Simple One Compartment Model: infusions
- 7c_14_04 The Two & Three Compartment Models: bolus dose
- 7c_14_05 The Two & Three Compartment Models: infusions
- 7c_14_06 Volume of Distribution & its Measurement
- 7c_14_07 Clearance and its Measurement
- 7c_14_08 Context Sensitive Half Time
- 7c_14_09 Target-Controlled Infusions

15 Link between Pharmacokinetics and Pharmacodynamics

- 7c_15_01 Pharmacokinetics in Practice: Patients & Models
- 7c_15_02 Interindividual Variation in Drug Response
- 7c_15_03 Pharmacogenetic Variation

04 Systematic Pharmacology

Number of Sessions 58

16 Inhalational Agents

- 7c_16_01 Halogenated Volatile agents
- 7c_16_02 Unwanted Effects of volatile agents
- 7c_16_03 Nitrous Oxide and Xenon
- 7c_16_04 Mechanism of General Anaesthetic Action

17 Sedative Agents

- 7c_17_01 Benzodiazepines & Sedative agents

18 Intravenous Induction Agents

- 7c_18_01 Propofol
- 7c_18_02 The Barbiturates
- 7c_18_03 Etomidate & Ketamine
- 7c_18_04 Properties of an Ideal Intravenous Induction Agent



7c_18_05 Intravenous Agents for Maintenance of Anaesthesia

19 Local Anaesthetics

7c_19_01 Local Anaesthetic Agents

7c_19_02 Mechanism of Local Anaesthetic Action

7c_19_03 Choice of Local Anaesthetic Agent

20 Analgesics

7c_20_01 The Analgesic Ladder: choice and perioperative prescribing

7c_20_02 Simple Analgesics: Aspirin & Paracetamol

7c_20_03 Non-Steroidal Anti-Inflammatory Drugs

7c_20_04 Opioid Drugs: General Properties & Mechanisms of Action

7c_20_05 Morphine & Opioid Agonists

7c_20_06 Opioids with Weak & Partial Agonist Activity and Opioid Antagonists

21 Muscle Relaxants

7c_21_01 The Neuromuscular Junction & the Nicotinic Acetylcholine Receptor

7c_21_02 Succinylcholine

7c_21_03 Non-Depolarizing Muscle Relaxants: General Properties

7c_21_04 Amino-Steroidal Muscle Relaxants

7c_21_05 Benzylisoquinolinium Muscle Relaxants

7c_21_06 Reversal of Neuromuscular Blockade

7c_21_07 The Ideal Short Acting Muscle Relaxant

22 Autonomic Drugs

7c_22_01 The Autonomic Nervous System: Anatomical Sites of Drug Action

7c_22_02 Drugs & the Sympathetic Nervous System

7c_22_03 Endogenous catecholamines

7c_22_04 Sympathomimetics

7c_22_05 Drugs & the Parasympathetic Nervous System

7c_22_06 Antimuscarinic Agents

23 Cardiovascular Drugs

7c_23_01 The Cardiovascular System and Sites for Drug Effects

7c_23_02 Inotropes and vasoconstrictors

7c_23_03 Drugs used in Ischaemic heart disease

24 Antiarrhythmics

7c_24_01 Classifications for Antiarrhythmic Drugs

7c_24_02 Clinical use of Antiarrhythmic agents

25 Hypotensive Agents

7c_25_01 Drugs to produce Intraoperative Hypotension

7c_25_02 Therapeutic Antihypertensives

7c_25_03 Antihistamines

26 Drugs Acting in the Blood Stream

7c_26_01 Anticoagulants

7c_26_02 Anti-platelet Agents

7c_26_03 Thromboprophylaxis & treatment of thrombosis

7c_26_04 Fluids for volume expansion



27 Drugs Acting on the Respiratory System

- 7c_27_01 Drugs Acting on The Respiratory System
- 7c_27_02 Drugs used in the Treatment of Acute Asthma

28 Drugs Acting on the GI Tract

- 7c_28_01 Drugs Acting on the GI Tract
- 7c_28_02 Antiemetic Drugs

29 Diuretics

- 7c_29_01 Diuretics

30 Drugs Acting on the Central Nervous System

- 7c_30_01 Anticonvulsants
- 7c_30_02 Antidepressants
- 7c_30_03 Anti-Diabetic Therapy: NIDDM
- 7c_30_04 Insulin Therapy in Diabetes Mellitus

31 Drugs Affecting Hormone Systems

- 7c_31_01 Corticosteroids
- 7c_31_02 Thyroxine and drugs used in thyroid disorders

32 Antimicrobial Agents

- 7c_32_01 Antibiotics: Mechanisms of Action
- 7c_32_02 Penicillins & Cephalosporins
- 7c_32_03 Gentamicin & Macrolides



7d Physics and Statistics

Total Number of Sessions 78

01 Physics and Clinical Measurement

Number of Sessions 58

01 Introduction

- 7d_01_01 Introduction to Physics & Statistics Section
- 7d_01_02 Physics & the Atmosphere 1
- 7d_01_03 Physics & the Atmosphere 2

02 Atoms & Molecules in Motion

- 7d_02_01 Kinetic theory of gases
- 7d_02_02 Newtonian mechanics
- 7d_02_03 Pressure and kinetic theory
- 7d_02_04 Gas Laws
- 7d_02_05 Gases in solution
- 7d_02_06 Real gases
- 7d_02_07 Density & viscosity
- 7d_02_08 Gas storage
- 7d_02_09 Gases & vapours
- 7d_02_10 Humidity
- 7d_02_11 Solvents & solutes
- 7d_02_12 Osmosis
- 7d_02_13 Heat & temperature
- 7d_02_14 Heat transfer
- 7d_02_15 Hydrostatics
- 7d_02_16 Mass & energy transfer
- 7d_02_17 Laminar & turbulent flow
- 7d_02_18 Sound & ultrasound

03 Modelling with Mathematics

- 7d_03_01 Mathematical modelling and Input-Output Principle (IOP)
- 7d_03_02 Model construction: CO₂ & alveolar ventilation
- 7d_03_03 Examination of model
- 7d_03_04 Mathematical functions
- 7d_03_05 Dependent & independent variables. Graphs
- 7d_03_06 Fick Principle & IOP
- 7d_03_07 Alveolar Gas Equation
- 7d_03_08 Apnoeic oxygenation and differential equations
- 7d_03_09 Step change in alveolar ventilation.
- 7d_03_10 Basic calculus
- 7d_03_11 Functions & rates of change
- 7d_03_12 Pre-oxygenation & e
- 7d_03_13 Logarithms and pH
- 7d_03_14 Mathematics & principles of measurement

04 Subatomic Processes

- 7d_04_01 Atomic structure
- 7d_04_02 Spectra & ionisation



- 7d_04_03 Chemical bonds & reactions
- 7d_04_04 Molecular structure & isomerism
- 7d_04_05 Reaction rates & thermodynamics
- 7d_04_06 Acids & bases
- 7d_04_07 Radioactivity
- 7d_04_08 Electromagnetic spectrum
- 7d_04_09 Light
- 7d_04_10 Quantum effects & spectra
- 7d_04_11 Lasers
- 7d_04_12 Electrons & current
- 7d_04_13 Electronic circuits
- 7d_04_14 Amplifiers and interference
- 7d_04_15 Excitable tissues & biological potentials
- 7d_04_16 Magnetism & current
- 7d_04_17 Nuclear magnetism & MRI

05 Periodicity

- 7d_05_01 Cyclical processes
- 7d_05_02 Modelling cyclical processes
- 7d_05_03 Physiological waveforms
- 7d_05_04 Measurement & display; transducers
- 7d_05_05 Resonance & damping
- 7d_05_06 Pressure and flows;pneumotachography

02 Statistics

Number of Sessions 20

06 Probability & Statistics

- 7d_06_01 Random processes
- 7d_06_02 Probability
- 7d_06_03 Random variables & distributions
- 7d_06_04 Probability models
- 7d_06_05 Normal distribution
- 7d_06_06 Measures of central tendency
- 7d_06_07 Measures of variability
- 7d_06_08 Population & sample
- 7d_06_09 Estimation & decision-making
- 7d_06_10 Hypothesis testing
- 7d_06_11 Confidence
- 7d_06_12 Samples of unknown mean & variance
- 7d_06_13 Related variables
- 7d_06_14 Categorical variables
- 7d_06_15 Non-parametric data
- 7d_06_16 Clinical testing
- 7d_06_17 Display of statistical data
- 7d_06_18 Clinical studies
- 7d_06_19 Evidence-based medicine
- 7d_06_20 Choice of test



7e Equipment

Total Number of Sessions 47

Number of Sessions 47

01 Gas Supplies

- 7e_01_01 Gas cylinders
- 7e_01_02 Piped gas supply
- 7e_01_03 Sources of central gas supply

02 The anaesthetic machine

- 7e_02_01 Anaesthetic machine 1 (Pressure regulator, pressure gauge, flowmeters)
- 7e_02_02 Anaesthetic machine 2 (Vaporizers, oxygen flush and alarms)
- 7e_02_03 Anaesthetic machine 3 (Pollution and Scavenging)
- 7e_02_04 Anaesthetic machine 4 (Checking of equipment)

03 Breathing systems

- 7e_03_01 Mapleson classification
- 7e_03_02 Circle system

04 Airway Equipment

- 7e_04_01 Face masks, Variable and Fixed performance oxygen delivery devices
- 7e_04_02 Oro-/naso-pharyngeal airway devices
- 7e_04_03 Extra-glottic airway devices
- 7e_04_04 Laryngoscopes and intubation aides
- 7e_04_05 Tracheal tubes
- 7e_04_06 Tracheostomy and cricothyrotomy tubes
- 7e_04_07 Breathing Systems Filters and Filtration

05 Ventilators

- 7e_05_01 Classification of ventilators
- 7e_05_02 Ventilators used in emergency and transport
- 7e_05_03 Ventilators used in the operating theatre and ICU
- 7e_05_04 CPAP and BIPAP

06 Humidification

- 7e_06_01 Humidification: heat-moisture exchange, hot water bath and nebulisers

07 Patient Monitoring

- 7e_07_01 Recommendations for standards of monitoring during anaesthesia patient
- 7e_07_02 ECG
- 7e_07_03 Pulse oximetry
- 7e_07_04 Capnography
- 7e_07_05 Non-invasive BP measurement
- 7e_07_06 Invasive BP measurement
- 7e_07_07 Central venous and pulmonary pressure and catheters
- 7e_07_08 Neuromuscular transmission
- 7e_07_09 Temperature measurement
- 7e_07_10 Arterial blood gases
- 7e_07_11 Oesophageal doppler cardiac output monitoring
- 7e_07_12 BIS, entropy and evoked potentials



08 Monitoring of gas delivery

- 7e_08_01 Oxygen concentration analysers
- 7e_08_02 N₂O and inhalational agents concentration analysers
- 7e_08_03 Ventilator alarms, Wright spirometer and pneumo-tachograph

09 Defibrillators and pacemakers

- 7e_09_01 Defibrillators and pacemakers

10 Fluid management equipment

- 7e_10_01 Intravenous cannulation and giving sets
- 7e_10_02 Haemofiltration and dialysis
- 7e_10_03 Syringes and volumetric pumps

11 Regional anaesthesia

- 7e_11_01 Spinal needles
- 7e_11_02 Epidural needles
- 7e_11_03 Nerve block needles and stimulators

12 Equipment to prevent cross infection

- 7e_12_01 Sterilization
- 7e_12_02 Disinfection

13 Electrical safety

- 7e_13_01 Electrical safety 1
- 7e_13_02 Electrical safety 2