

1. What is the nominal maximum pressure that the Manujet can deliver?

- A) 1 ATM
- B) 2.5atm
- C) 2atm
- D) 3.5atm**
- E) 5 atm

Manujet:

- The Manujet is connected to a high-pressure oxygen source such as wall or cylinder oxygen via a pin connection.
- The pressure regulator on the ManujetTM device allows adjustment of pressure.
- Pressure regulator gauge set at 0 - 3.5bar (3.45ATM)
- This feature is not available on the SandersTM Injector – which always delivers oxygen at 4 bar (or 4000 cm of water).
- If the device allows pressure adjustment, the pressure should be set to 1BAR/ATM (or 1000 cm of water). This reduction in pressure reduces flows to more manageable levels. 1 Bar delivers 250 mls/sec.

2. A lady is having elective orthopedic procedure on a limb. She takes escitalopram for depression but is otherwise healthy. Which drug is not relatively contraindicated:

- A) clonidine
- B) omeprazole
- C) metoprolol**
- D) pethidine
- E) tramadol

- escitalopram: SSRI

- pethidine, tramadol → increased risk of serotonin syndrome
- clonidine enhances sedative effects of escitalopram
- omeprazole; possible enhanced effect of escitalopram
 - hepatic enzyme inducer

3. Intra-arterial propofol 10ml (100mg). Extreme pain. Most appropriate immediate management:

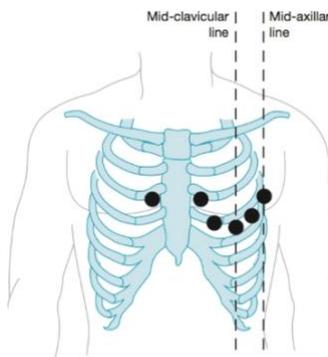
- a. 30ml normal saline intra-arterial
- b. heparin 500IU
- c. lignocaine 50mg
- d. papverine 50mg
- e. observe**

- when injected intra-arterial: causes hypereamia and distal blanching
- observe, heat pack, elevate limb

4. Best indicator of difficult intubation in obese patient

- A) interincisor gap
 - B) mallampatti score
 - C) pre-tracheal soft tissue thickness
 - D) thyromental distance
 - E) ROM cervical spine
- **Euro Journal of ANaesthesia 2016**
 - o BMI >50 and neck circumference independent risk factor for difficult intubation
 - o Male sex, BMI>50 independent predictors for difficult BMV
 - **Increased neck circumference to thyrimental distance >5 independent risk factor for difficult intubation**

5.0 Where should V4 be positioned.



12 lead ECG: precordial leads

Electrode Name	Colour	Position	System
RA	White ('snow')	Right arm	3-electrode 5-electrode 12-lead ECG
LA	Black ('smoke')	Left arm	3-electrode 5-electrode 12-lead ECG
LL	Red ('fire')	Left leg	3-electrode 5-electrode 12-lead ECG
RL	Green ('grass')	Right leg	5-electrode 12-lead ECG
C	Brown	Central chest Over sternum	5-electrode
V1	Red	Sternal edge Right 4th ICS	12-lead ECG
V2	Yellow	Sternal edge Left 4th ICS	12-lead ECG
V3	Green	Between V2 and V4	12-lead ECG
V4	Blue	Mid-clavicular line Left 5th ICS	12-lead ECG
V5	Orange	Between V4 and V6 Left 5th ICS	12-lead ECG
V6	Purple	Mid-axillary line Left 5th ICS	12-lead ECG

6.0 Ultrasound of lung. A lines and sliding lung are seen. This is consistent with

- A) pneumonia
- B) pleural effusion
- C) pulmonary oedema
- D) pneumothorax
- F) normal lung**

- Normal lung
 - o Lung sliding, A lines
- pneumothorax:
 - o loss of lung sliding
 - o loss of short path reverbtion artifact: B lines, comet tail artifact, thin vertical bright artefacts
 - o increased prominence of long path reverbation artefacts: A lines
- pneumonia
 - o B lines and tiny areas of subpleural consolidation (parapneumonic effusion)
 - o Hepatisation of lung
 - o Irregular consolidation/air interface – shred sign
 - o Aerated bronchi: air bronchograms and dynamic air bronchograms
- pleural effusion
- pleural oedema
 - o B lines + pleural effusion

Q7. Aspriin efficacy is known to be reduced with the use of

- a) parecoxib
- b) diclofenac
- c) ibuprofen**
- d) naproxen
- e) calecoxib

Article 2013: Antepatelet effects of aspirin: which anti-inflammatories interact Horn et al

- ibuprofen, naproxen, indomethacin
- one study found celecoxib to have an effect on anti-platelet function, whilst another study found the opposite
- paracetamol, diclofenac, meloxicam, sulindoc does not effect the efficacy of aspirin

Q8. Risk of thromboembolic effect is LOWEST with

- a) parecoxib
- b) diclofenac
- c) ibuprofen
- d) naproxen**
- e) celecoxib

reference

<https://www.fda.gov/downloads/AdvisoryCommittees/CommitteesMeetingMaterials/Drugs/ArthritisAdvisoryCommittee/UCM386432.pdf>

- lowest risk naproxen then ibuprofen
- highest risk diclofenac

Q9 Known risk factor for propofol infusion syndrome

- a) hypotension
- b) hypoxemia
- c) corticosteroids (if infusion)**
- d) vasopressor requirement
- e) young age**

CEACCP/LIFL

risk factors for developing PRIS

- severe head injuries/ acute neurological injury, sepsis, high exogenous or endogenous catecholamine and glucocorticoid levels, low CHO to high lipid intake, inborn errors of fatty acid oxidation
- younger age
- corticosteroid infusion

PRIS

- PRIS defined as acute refractory bradycardia → asystole in the presence of one of the following : metabolic acidosis, rhabdomyolysis or myoglobinuria, lipemic plasma
- Pathophysiology: impairment/uncoupling of mitochondrial oxidative phosphorylation and free fatty acid utilization → lactic acidosis and myocyte necrosis
- Prevention
 - o Avoid in propofol sedation in patients for high risk of PRIS
 - o Ensure adequate CHO in diet
 - o Don't exceed doses >4mg/kg/hr
- ABG: metabolic acidosis, increased lactate, ECG demonstrates Brugada morphology ECG (coved ST segment elevation V1-V3), RBBB, lipemic plasma, increased K

Q10 Use of schneider rather Marsh model TCI Pharmacokinetics in a adult patient of normal weight for longer than 15minutes procedure will result in

- A) smaller loading dose and smaller overall dose**
- B) smaller loading dose but larger overall dose
- C) a larger loading dose and larger overall dose
- D) a larger loading dose but smaller overall dose
- E) a larger/? Smaller loading dose and overall dose dependent

Reference VEZ pharmacology textbook, Goodman and gillman

- the Schneider model usually delivers a smaller loading dose and smaller total dose compared with the marsh model in the same patient
- marsh model underdoses in children under age of 16
- marsh model does not account for age, schneider dose
- one minute after bolus
 - o marsh Cp = 4mcg/ml CE = 0.9mcg/ml
 - o schneider CP = 8.2mcg/ml Ce = 3.6mcg/ml
 - o differences less significant after 10minutes, after 30 minutes both estimate the same levels; net effect schneider administers less propofol
- schneider has fixed V1
- marsh central compartment is a function of weight

- schnider model has faster TTPE (1.6 vs 4.5min), less overshoot and undershoot w schnider effect site targeting than with Marsh
- schnider probably more safe in elderly and compromised patients
- side note: remifentanyl minot model uses LBM, actual body weight can be entered

Q11. Patient for emergency laparotomy for peritonitis. You insert a 7.5F central line into the carotid artery. Most appropriate management

- immediately remove and apply pressure for 20minutes
- deliver 500IU heparin
- leave in situ for 24 hrs then remove and apply pressure for 20minutes
- leave in for 24hrs then remove and consult vascular surgery
- consult surgical vascular team at completion of case**

<https://emcrit.org/wp-content/uploads/2010/10/Vascular+Complications+of+Central+Venous+Catheter+Placement+Barash+and+Landoni+JCVa.pdf>

Q12 Elderly patient from ICU with necrotic bowel for laparotomy. Borderline oxygenation and renal replacement therapy. Current INR 2.1, plt 105, fibrinogen 1

5g/L HB 90gm/L Appropriate management would be

A 2 unit FFP and 1 platelets

B 2 unit FFP, 1 unit PRBC to achieve correction of anaemia

C cryoprecipitate to achieve fib >2g/L

Fibrinogen concentrate to achieve fibrinogen <2g/L

Proceed to surgery if no clinical signs of bleeding

Q 15. E. Promethazine

P12 of “Perioperative Anaphylaxis Management Guidelines” reads: “oral antihistamines such as cetirizine have a better side effect profile compared with IV promethazine which can worsen hypotension”.

Q 16. D.

Depends on options. Injury severity score (ISS) is an established score to assess trauma severity, ranging from 0 - 75 with ‘major trauma’ defined as an ISS > 15.

6 body regions (1. Head or neck; 2. Face; 3. Chest; 4. Abdo/pelvis; 5. Extremities or pelvic girdle; 6. External) are scored out of six (1. Minor; 2. Moderate; 3. Serious; 4. Severe; 5. Critical; 6. Maximal / unsurvivable). The top 3 highest scoring regions scores are squared and added together to give final score ($ISS = A^2 + B^2 + C^2$). If any region scores a 6 the overall ISS score is automatically 75.

Firth D, et al. Definition and drivers of acute traumatic coagulopathy. *J Thromb Haemost.* 2010;8(9):1919 – 1925. States an ISS > 15 (i.e. major trauma) is associated with a 67% incidence of traumatic coagulopathy.

Q17. B.

qSOFA = quick sequential (sepsis related) organ failure assessment

Score out of 3:

1. Respiratory rate > 22
2. Altered Mentation
3. SBP <100mmHg

Ref: Singer M, et al. *JAMA*. 2016.

Q18. B.

ECG = brugada syndrome.

Q19. C.

Failure to oxygenate on CPB with opportunity to come off bypass as cardioplegia not yet delivered. Safest option is to return to lung ventilation and go off CPB until problem rectified.

Q20. C.

Q21. D

Thrombin time is the most sensitive measure of dabigatran effect according to the Pradaxa drug info leaflet. In fact, TT is "too sensitive to give quantifiable results" so dilute TT is used for this purpose. Hemoclot is a thrombin inhibitor assay that is also of use.

Q22. C.

Idarucizumab is an antidote for dabigatran. FFP and tranexamic acid still likely to be given and of use.

Q23. A.

Q24. C.

Q25. A.

Distance below water in the 3rd bottle is equal to the negative pressure generated when suction is applied.

Q26. B.

Chi-square and Fisher exact test both useful for non-parametric data comparing >2 groups. Fisher-exact test gives more accurate p-value (even with scant data) whereas Chi-square is an estimate.

Q27. C. The groups being compared are unpaired. BP data is continuous → parametric.

Type of Data				
Goal	Measurement (from Gaussian Population)	Rank, Score, or Measurement (from Non- Gaussian Population)	Binomial (Two Possible Outcomes)	Survival Time
Describe one group	Mean, SD	Median, interquartile range	Proportion	Kaplan Meier survival curve
Compare one group to a hypothetical value	One-sample <i>t</i> test	Wilcoxon test	Chi-square or Binomial test **	
Compare two unpaired groups	Unpaired <i>t</i> test	Mann-Whitney test	Fisher's test (chi-square for large samples)	Log-rank test or Mantel-Haenszel*
Compare two paired groups	Paired <i>t</i> test	Wilcoxon test	McNemar's test	Conditional proportional hazards regression*
Compare three or more unmatched groups	One-way ANOVA	Kruskal-Wallis test	Chi-square test	Cox proportional hazard regression**
Compare three or more matched groups	Repeated-measures ANOVA	Friedman test	Cochrane Q**	Conditional proportional hazards regression**
Quantify association between two variables	Pearson correlation	Spearman correlation	Contingency coefficients**	
Predict value from another measured variable	Simple linear regression or Nonlinear regression	Nonparametric regression**	Simple logistic regression*	Cox proportional hazard regression*
Predict value from several measured or binomial variables	Multiple linear regression* or Multiple nonlinear regression**		Multiple logistic regression*	Cox proportional hazard regression*

Q28. D. Depends on interpretation of “0.05 or greater” and the exact wording in the exam.

p-value or probability value is the probability for a given statistical model that, when the null hypothesis is true, the statistical summary (such as the sample mean difference between two compared groups) would be the same as or more extreme than the actual observed results.

Q29. A 99.8%

Kerry Brandis (not sure on page numbers as don't have the book).

Q30. C.

Jacob *et al.* *Anesthesiology*. 2011;114(2):311-7.

MCQ

Qu 30) The peripheral nerve most commonly injured in surgical procedures is:

- a) Common peroneal
- b) Sciatic
- c) Ulnar
- d) Radial
- e) Lateral femoral cutaneous

ATOTW: ulnar nerve 28%, brachial plexus 20%, lumbosacral root 16%, spinal cord 13%. Injury is less common for the sciatic, median, radial and femoral nerves.

Reference:

<http://www.frca.co.uk/Documents/258%20Peripheral%20Nerve%20Injuries%20and%20Positioning%20for%20Anaesthesia.pdf>

31) The peripheral nerve most commonly injured in total knee arthroplasty is:

- a) Lateral femoral cutaneous
- b) Infrapatellar branch of saphenous
- c) Sciatic

No recalled option here for peroneal nerve, but this is the answer. Peroneal nerve is the most commonly injured after knee arthroplasty. MOA is stretch or traction of nerve.

Reference:

https://www.researchgate.net/publication/11615453_Nerve_injury_after_primary_total_knee_arthroplasty

32) For emergency surgery, the minimum effective prothrombinex dose to reduce an INR from 2.0 to 1.5 is:

- a) 5
- b) 15
- c) 25
- d) 35
- e) 50

PROTHROMBINEX DOSING

- Recommended dose of prothrombinex in 2005 was 25- 50 IU/kg
- This has been replaced in 2013 by doses according to initial INR and the target INR (i.e. 15-50 IU/kg)

	Initial INR		
Target INR	1.5–2.5	2.6–3.5	3.6–10.0
0.9–1.3	30 IU/kg	35 IU/kg	50 IU/kg
1.4–2.0	15 IU/kg	25 IU/kg	30 IU/kg

Reference: LITFL <https://lifeinthefastlane.com/ccr/warfarin-reversal/>

33) Patient for breast surgery. You undertake a thoracic wall block. The nerve which is unlikely to be blocked is:

- a) medial pectoral
- b) dorsal thoracic
- c) supraclavicular
- d) lateral pectoral
- e) thoracodorsal

PECS II is a thoracic wall fascial plane block using a relatively large volume of a local anesthetic to immerse the LPN, MPN, LTN, and lateral cutaneous branches of the T2–T4 intercostal nerves. The anterior cutaneous branches of the T2–T6 nerves, which supply the medial third of the breast, are spared. A Supplemental parasternal intercostal nerve block may be required for surgery involving this area. The upper part of the breast was not anesthetized by PECS II either. PECS II was previously demonstrated to have more favorable postoperative analgesia than did a single-level PVB for MRM [25]. Neither a single-level PVB nor PECS II alone provided complete anesthesia in radical breast surgery.

NYSORIA:

<http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0166227>

34) The best evidence for medical treatment of trigeminal neuralgia supports use of:

- a) Amitriptyline
- b) Gabapentin
- c) Venlafaxine
- d) Carbamazepine
- e) Sodium valproate

Reference: Nurmikko, T.J. & Eldridge P.R. Trigeminal neuralgia – pathophysiology, diagnosis and current treatment. Br J Anaesth 2001; 87:117-32

35) Microvascular decompression for trigeminal neuralgia results in a mean ? resolution of symptoms for:

- a) 1 year
- b) 3 years
- c) 5 years
- d) 7 years
- e) 10 years

At 1-2 years the incidence of complete pain relief is 75-80%, at 8-10 years, this proportion has been reduced to 58-64%, with a further 4-12 % suffering from minor recurrence only.

Reference: Nurmikko, T.J. & Eldridge P.R. Trigeminal neuralgia – pathophysiology, diagnosis and current treatment. Br J Anaesth 2001; 87:117-32

36) Young man for thoracic surgery requiring OLV. You decide to use a Robert shaw left 39F DLT. You insert and inflate both cuffs and ventilate the bronchial lumen. Auscultation sounds like isolation of left lung. You then attempt to ventilate the tracheal lumen and get high pressures and no breath sounds but on deflating the bronchial cuff are able to ventilate both lungs. Appropriate management is to:

- a) change to 41 F
- b) insert further 1 cm
- c) change to 37F
- d) withdraw further 1 cm
- e) Remove DLT and start again

37) Kessel blade angulation is

- a) 90 degrees
- b) 100 degrees
- c) 110 degrees
- d) 120 degrees
- e) 130 degrees

<https://lifeinthefastlane.com/ccclaryngoscope-and-blades/>

40) Hepatic resection and you suspect large venous air embolus with associated haemodynamic instability. Appropriate management includes positioning patient

- a) Head down, left tilt
- b) Head down, right tilt
- c) Head up, no tilt
- d) Head up left tilt

e) Head up right tilt

Oxford handbook page 433

41) Long labour with motor and sensory defect suggesting obturator injury

?? really

CEACCP suggest that in prolonged second stage labour, the fetal head compressing the lumbosacral trunk causes foot drop. Also 25% of lesions occur with femoral or obturator. In stirrups, the peroneal nerve is affected the most.

Reference: <https://academic.oup.com/bjaed/article/13/2/63/283709/Post-natal-neurological-problems>

42) Neurosurgical case. Volatile which at 1 MAC has the least effect on ICP

- a) Desflurane
- b) Isoflurane
- c) Halothane
- d) Enflurane
- e) Sevoflurane

At 0.5 MAC, isoflurane, desflurane, and sevoflurane minimally delay, but preserve the cerebral autoregulation, whereas at 1.5 MAC autoregulation is considerably reduced by isoflurane and desflurane. Sevoflurane, in contrast, produces much lesser cerebral vasodilation and delays but preserves the autoregulatory response even at 1.5 MAC, making it the favoured volatile agent during neuroanaesthesia.

Reference: <https://academic.oup.com/bjaed/article/13/4/113/345118/Cerebral-physiology>

43) Anaesthetic machine required for trigger free anaesthetic. Has been flushed but no carbon filters available. For entire case flows should run at a minimum of

- a) 2L/min
- b) 4 L/min
- c) 6 L/min
- d) 8 L/min
- e) 10 L/min

MHANZ Guidelines. <http://www.anaesthesia.mh.org.au/mh-resource-kit/w1/i1002692/>

See the MH introduction download tab.

44) JW for AAA repair refusing blood products despite long discussion. You refuse to do the case. This is an example of:

- a) Beneficence
- b) Autonomy
- c) Maleficence
- d) Justice
- e) Paternalism

Answer: likely c – maleficence is the act of doing harm. Definitely not beneficence, autonomy or justice. Paternalism is the act of deciding for the patient. In this case the anaesthetist needs to respect the wishes of the patient and to utilise other methods for blood loss reduction.

45) Cardiac output achieved with effective CPR

- a) Less than 10%
- b) 10-20%
- c) 20-30%
- d) 30-40%
- e) 40-50%

<https://academic.oup.com/icvts/article/7/1/157/649109/The-more-the-better-Cardiac-output-monitoring>

Achieved by paramedics

45 - Effective CO in CPR - ANS C

-25-33% Emerg med website

46 - Newborn Resus SaO₂ Target - ANS C

-at 5min the target is 80-90%

-at 1min it is 60-70

-at 2min it is 65-85

-at 3min it is 70-90

-at 4min it is 75-90

-at 5min it is 80-90

-at 10min it is 85-90

47 - Stroke risk ANS ?9% if going off CHADS₂ - D - 12% as CHADS₂ is 12.5%

-CHADS₂ Vs CHA₂DS₂VASc

CHADS

-CCF, HTN, Age >75, DM, Stroke x2

0 - 1.9

1 - 2.8

2 - 4

3 - 5.9

4 - 8.5
5 - 12.5
6 - 18.2

CHA2DS2VASc

-CCF, HTN, Age 65-74, DM, Stroke 2x, Vascular Dx, Age >75, Sex - female

0 - 0
1 - 1.3
2 - 2.2
3 - 3.2
4 - 4.8
5 - 7.2
6 - 9.8
7 - 11.2
8 - 10.8
9 - 12.2

Aspirin if 0-1, WRF if 2 or greater

48 - Contraindications to peribulbar block ANS Staphyloma C

Why? Relative contraindications are axial length greater than 26mm in severe myopia which as a long AP diameter and my contain staphylomas (outpouching)
Other include trauma, infection, inability to lie flat or still

49 - Sparing of lateral forearm ANS A - sparing of musculocutaneous

WHY? The lateral antebrachial cutaneous nerve is a terminal branch of the musculocutaneous
- the medial forearm is supplied by the medial antebrachial which is C8-T1 and often spared

50 - Maximum time for tourniquet? ANS D - 120min

Source - CEACCP article suggesting literature is 90-120min, question asks for maximum

51 - Length of cuff inflation with biers block when using prilocaine (methaem)
ANS? remembered wrong?

Anaesthesia UK says 20min minimum
UK ED college says 20min minimum

52 - ABS prior to tourniquet ?ANS B - 30min prior??

NCBI article states literature says 5-10min before inflation
AAGBI guidelines 2010 state at least 5min prior

53 - Molar 48 removal and left chin numbness ? ANS C?

Mental nerve - branch of Inferior alveolar nerve -

Out of interest teeth are labelled by the ISO system
Right Upper is 1, Left upper is 2, Left Lower is 3 and R lower is 4
Teeth are then labelled from centre to lateral starting at 1

Inferior alveolar nerve supplies sensation to the teeth (branch of the mandibular (trigeminal)

Mental nerve - sensation to chin and lower lip BUT is a branch of the inferior alveolar nerve

Neurpraxia of the alveolar nerve has been reported with wisdom tooth extraction

54 - Numbness on upper lip ANS - Infraorbital B

Lacrimal nerve - branch of ophthalmic (trigeminal), supplies sensory to lacrimal gland, conjunctiva and upper eyelid

Infraorbital - actually starts as the maxillary nerve (trigeminal), supplies lower eyelid, upper lip, nasal vestibule

Infratrochlear Nerve (branch of nasocilliary), supplies upper eyelid, conjunctiva, bridge of the nose

Supraorbital Nerve - supplies upper eyelid, conjunctiva. Branch of frontal nerve

Occulomotor - 3rd cranial, most of the movements of the eye, also accomodation and pupils

55 - Abdominal contractions with brachial plexus block ANS B

Im assuming they mean phrenic nerve contractions, which can occur with interscalene mainly but also supraclavicular blocks

-the phrenic nerve roots (C3,4,5) are more anterior and thus move the needle more posterior ALSO NEVER aim the needle cephalad as increases the chances of cervical cord injury

56 - ANS b (L3/4)

L2/3 is the level that the cord ends (conus medullaris) in neonates, (L1 in adults)
NYSORA recommends lower than L2/3 for safety
Interestingly triffiers line is L3/4 in adults, in kids this is also more caudad and is at the level of L4/5 or even S1 so is a safe level

57 Scalp Block ANS A

Another shit question, largely a relic and not used that much anymore

Nerves blocked

- Supratrochlear (trigeminal) V1
- Zygomaticotemporal (trigeminal) V2
- Auriculotemporal (trigeminal) V3
- Lesser Occipital (branch of second or third cervical spinal)
- Greater Occipital (branch of third cervical spinal)
- Greater Auricular (branch of 3rd cervical spinal)

58 Difficult OBS airway - ANS B - insert supraglottic

source is the 2015 DAS obstetric guidelines, clearly state to insert LMA or mask post 2x attempts at intubation, then consider waking

59 AICD - ANS E

Ceases defib and doesnt effect pacing usually

60 A Albumin in Head injury - contraindicated SAFE Study, higher mortality when compared to NS

61 TURP Sx, ANS B

Mx of Symptomatic hypoNa is hypertonic Saline

62 Emergence Delerium, ANS ?B

May have been misremembered, propofol as a single agent is associated with lower rates, transition does help but not as much as dexmetatomidine, clonidine, fentanyl

Review article 2016

63 DBS and procedures

ECT is ok with DBS, not contraindicated, does require review and planning the
Cardioversion doesn't seem to be contraindicated
MRI is in some settings so probably best answer

64

A 5 month old child is for surgery in the morning. What is the fasting time advice:

- a) 6 hours for breast milk and 2 hours for clear fluids
- b) Fast from midnight
- c) 3 hours for breast milk and 2 hours for clear fluids
- d) 4 hours for breast milk and 2 hours for clear fluids
- e) 3 hours for breast milk and clear fluids up to time of surgery

For children **over 6 weeks**:

6hrs: solids and formula milk

4hrs: breast milk

2hrs: clear fluids

Direct from ANZCA PS15 Day Procedure professional document.

2,4,6 rule: 2 clear fluids; 4 breast milk; 6 others

(if **under 6 weeks is 2,4,4** but same concept).

65

You perform a lung ultrasound in a patient. You see A lines and sliding lung.
What is the diagnosis?

- a) Normal
- b) Pneumonia
- c) Pneumothorax
- d) Pulmonary oedema

66

NIM tube question (REPEAT)(REPEAT)

67 TEG hyperfibrinolysis (REPEAT) (REPEAT)

68 Obturator nerve Question (REPEAT) (REPEAT)

69 Inferior alveolar nerve question (REPEAT) (REPEAT)

70

A patient has ceased his dabigatran. He is bleeding intra-op in the morning suspect dabigatran causing the bleeding. What is the most effective treatment?

- a) Some monoclonal antibody
- b) Idarucixumab
- c) Prothrombinex
- d) Novo 7
- e) TXA

Answer: B

71)

Dabigatran. What will give the most accurate estimate of effect?

- a)
- b) INR
- c) thrombin time
- d) APTT

72)

Patient with weak toe dorsiflexion. Pain in the lateral calf. What is the most effective treatment? (seemed like L5 root compression)

- a) Epidural steroid
- b) Facet joint injection

73)

Patient on SSRI. What is the LEAST likely post-op effect?

- a) AF
- b) Post op bleeding requiring transfusion
- c) VT

74) What is the 1st line agent for trigeminal neuralgia?

- a) Carbamazepine
- b) Pregabalin
- c) NSAID
- d) Amitriptyline

75) What is the expected time to return of pain after trigeminal nerve decompression?

- a) 2 years
- b) 3 years
- c) 5 years
- d) 10 years

e) 15 years

76) From NAP5 what is the incidence of awareness when NMB used?

- a) 1:500
- b) 1:1000
- c) 1:2000
- d) 1:8000
- e) 1:11000

D

NAP5

The incidence of certain/probable and possible accidental awareness cases was ~1:19,600 anaesthetics

The incidence with neuromuscular block (NMB) was ~1:8200 (1:7030-9700), and without, it was ~1:135,900 (1:78,600-299,000)

The incidence of accidental awareness during Caesarean section was ~1:670 (1:380-1300)

Two-thirds (82, 66%) of cases of accidental awareness experiences arose in the dynamic phases of anaesthesia, namely induction of and emergence from anaesthesia

One-third (43, 33%) of accidental awareness events arose during the maintenance phase of anaesthesia, mostly due to problems at induction or towards the end of anaesthesia

77) Patient with AF, 73 year old, HTN, diet controlled DM, recent slurred speech and weak arm (yes that what it says). What is the risk of stroke?

- a) 4%
- b) 6%
- c) 9%
- d) 12%
- e) 18%

Answer: B
Score of 5

CHADS₂ → CHA₂DS₂VASc

CHADS2 score	Patients (n = 1733)	Adjusted stroke rate % / year	CHA2DS2-VASc score	Patients (n = 7329)	Adjusted stroke rate % / year
0	120	1.9	0	1	0
1	463	2.8	1	422	1.3
2	523	4.0	2	1230	2.2
3	337	5.9	3	1730	3.2
4	220	8.5	4	1718	4.0
5	65	12.5	5	1159	6.7
6	5	18.2	6	679	9.8
			7	294	9.6
			8	82	6.7
			9	14	15.2

From ESC AF Guidelines <http://www.escd.org/guidelines/heart/af-guidelines/>
GuidelineDocument/guidelines/af/Top

78)

25 year old MBA. Femur fracture.. Femoral nerve block and 25 mg morphine. In ED for 12/24. Normal CXR on admission. Now with RR 25, BP 120/80, HR 90, Crackles on chest, Sats 90%

What is the cause?

- a) Lung contusion
- b) Aspiration
- c) Fat embolism
- d) Opioid overdose

Answer: A

Normal BP but crackles – and a bit early for both fat embolism and pulmonary contusions.

79

Child brought in, Purpuric rash, lethargy and reduced respiratory rate. What would be the ABG?

a	pH 7.25	pCO ₂ 55	pO ₂ 80	BE -6	HCO ₃ ⁻ 18
b	pH 7.24	24	95	-8	14
c	7.2	60	80	1	26
d	7.45				
e	7.45				

Answer: ?A

Likely metabolic acidosis secondary to sepsis and tiring out hence increase PCO₂

80

Nasal Prongs at 3L/min. What is max FiO₂?

- a) 0.24
- b) 0.28
- c) 0.32
- d) 0.36
- e) 0.4

Answer: C

Flow rate (L/min)	Approximate FiO ₂
1	0.24
2	0.28
3	0.32
4	0.36
5	0.40
6	0.44

• For each 1 L/min increase in flow, the FiO₂ is assumed to increase 4%.

• $FiO_2 = 20\% + (4 \times \text{oxygen litre flow})$

81

6 year old child with Hb 70. How much blood (mls) to give to achieve an Hb of

80?

- a) 80
- b) 120
- c) 160
- d) 200
- e) 240

Answer: A

Frank Shann's equation:

4ml/kg of packed cells will increase Hb by 10g/L.

Thus $4 \times 20 \times 4 = 320$ mls

Alternatively, National Blood Transfusion equation: *(basically the same equation)*

volume of packed cells (ml) = $0.4 \times \text{pt weight (kg)} \times \text{desired increase in Hb (g/L)}$

82 what is the dose of IM adrenaline for 14 year old with Grade 3 anaphylaxis?

- a) 100 mcgs
- b) 200
- c) 300
- d) 400
- e) 500

Answer: E

AAGBI

Adrenaline Intramuscular > 12 years: 500 lg IM (0.5 ml of a 1 : 1000 solution) 300 lg IM (0.3 ml of a 1 : 1000 solution) if the child is small

6-12 years: 300 lg IM (0.3 ml of a 1 : 1000 solution)

Up to 6 years: 150 lg IM (0.15 ml of a 1 : 1000 solution)

83) You place a 39 Fr DLT in a man. Inflate bronchial cuff up and ventilate left lung. Then inflate tracheal cuff with high inspiratory pressures and can't ventilate. Deflate bronchial cuff and can ventilate both lungs. What to do?

- a) Exchange for 37 Fr
- b) Exchange for 41 Fr
- c) Deflate both cuffs and advance DLT
- d) Remove DLT and start again
- e) Deflate cuffs and pull out DLT a bit

Answer: C (repeat 2009Mar 2010 Aug)

84 Just commenced cardiopulmonary bypass. No cardioplegia yet. Blood in arterial line is same colour as venous line. Sats 90%. What is the next step?

- a) Connect extra O2 line to membrane oxygenator directly

- b) Clamp aorta and start cardioplegia and continue lung ventilation
- c) Wean from bypass and ventilate
- d) Continue bypass and ventilate lungs FiO2 100% (or reinflate lungs)

Answer: D

Blood shunting through lungs

85 Just weaned from cardiac pulmonary bypass and blood coming up from the mouth. Pulmonary artery catheter in situ. What is the management?

- a) Pull back on PAC
- b) Restart CPB and heparinize
- c) Start vasopressor

Answer: ?B

Pulmonary artery rupture.

86) Patient for AAA. Patient refuses blood transfusion due to risk of CJD. Despite knowing risks of not having blood, patient still refuses. In considering the high risk of not allowing a transfusion with this procedure, the anaesthetist refuses to anaesthetize. The principle that best describes this:

- a) Maleficence
- b) Beneficence
- c) Paternalism
- d) Autonomy
- e) Justice

Answer: C

87 FiO2 for flat neonate

88 Sats for neonate at 5 mins

89 (repeat)

What product is not in Cryoprecipitate?

- a) Fibrinogen
- b) Factor 8
- c) Factor 13
- d) Factor 9
- e) Von willebrand factor

Answer: D

90 (repeat)

Patient with signs of DVT. Was on heparin infusion last week. Platelets now 40. What is the most appropriate treatment?

- a) Clexane
- b) Fondaparineux
- c) Therapeutic heparin
- d) Lepirudin
- e) Warfarin

Answer: D

91 Patient for AV fistula. Had interscalene

block. Incision in lateral forearm and immediate pain. Which nerve not blocked?

- a) Musculocutaneous nerve
- b) Axillary
- c) Ulnar
- d) Median
- e) Radial

Answer: A

Lateral antebrachial cutaneous nerve is a terminal branch of the musculocutaneous

- the medial forearm is supplied by the medial antebrachial which is C8-T1 and often spared

92 What is this device? (PICTURE of bivent PPM with AICD)

- a) Dual chamber bivent PPM with AICD (answer)
- b) Single chamber PPM
- c) Dual chamber PPM
- d) AICD
- e) Loop Device

93

25 year old brought in for syncope. Brugada ECG RBBB, ST elevation in V1-V2, HR 100. What is the management?

- a) AICD
- b) Metoprolol
- c) Amiodarone
- d) Ramipril
- e) Aspirin

Answer: A

Life in the fast lane

94 (repeat)

Which drug will reduce the analgesic effect of tramadol?

b) Ondansetron

95

Tramadol Question and AF?

a) Clonidine

b) Metoprolol

96 Perform GA for emergency LUSCS for foetal bradycardia. 2 failed attempts at intubation. What to do?

a) Reattempt at intubation

b) LMA insertion

c) Get consultant to intubate

d) Perform needle cricothyroidotomy

e) Wake patient up

Answer: B

source is the 2015 DAS obstetric guidelines, clearly state to insert LMA or mask post 2x attempts at intubation, then consider waking

97) Patient post TKR with tourniquet. 12/24 post op good knee flex and extension. 18/24 post op weak flexion, paraesthesia in calf and pain. Cause?

a) spinal trauma

b) cuff neurapraxia

c) muscle necrosis

98 Post TKR patient has absent plantar flexion, calf muscle weakness and decreased sensation on top of the foot. Injury to which nerve?

a) Common peroneal

b) Deep peroneal

c) Femoral nerve

99 which drug inhibits the antiplatelet effect of aspirin?

a) Celecoxib

b) Ibuprofen

- c) Diclofenac
- d) Ketorolac
- e) Parecoxib

Answer: B (see above)

100 A patient is allergic to Sulphur drugs. Reaction after taking co-trimoxazole (generic name). Which of these can she not take?

- a) Frusemide
- b) Metoprolol
- c) Morphine sulphate
- d) Celecoxib

Answer: D

Celecoxib
Sulfasalazine
Sulfadiazine
Sumatriptan
Frusemide
Hydrochlorothiazide

101) Which volatile increases the ICP the least at 1 MAC?

- a) Desflurane
- b) Enflurane
- c) Isoflurane
- d) Sevoflurane

D (repeat)

102) How long does it take for buprenorphine patch to reach full effect?

- a) 1 day
- b) 2 days
- c) 3
- d) 4
- e) 5

Answer: C

Fentanyl patch:

Peak: 24 - 72 hours.

Half-life: 22-25 hours.

Buprenorphine patch:

Peak: by 72 hours

Half-life: 12 hours.

103) Need to remove upper lip lesion. Which nerve to block?

- a) Infraorbital
- b) Infratrochlear
- c) Supraorbital
- d) Mental

Answer: A

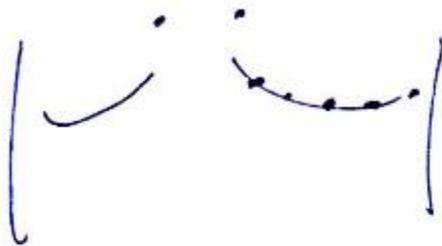
104 what is the most sensitive (or accurate) predictor of difficult intubation in obesity?

- a) MP score
- b) Pretracheal soft tissue
- c) Mouth opening

Answer: B (repeat)

105

Where on the chest is lead v4 placed?



- a) a
- b) b
- c) c
- d) d
- e) e

106

Patient is flushed diaphoretic with diarrhea. Scheduled for hemicolectomy for tumour excision. What is the best first treatment?

- a) Octreotide
- b) Phenoxybenxamine
- c) Prazosin

Answer: A

Carcinoid tumour causing syndrome

Symptoms:

Intermittent flushing - head neck torso (90%)

Diarrhoea (78%)

Bronchospasm (20%)

Cardiovascular instability - hypo/hypertension, tachy
hyperglycaemia

right heart failure - endocardial fibrosis - pulmonary & tricus
valves (mediators metabolised in lung before reaching L heart)

107 Which is not relatively contraindicated with escitalopram?

- a) Clonidine
- b) Omeprazole
- c) Metoprolol
- d) And e) sympathomimetics or vagolytics

Answer: C (repeat)

108) what is the cause of lactic acidosis with metformin use?

- a) Reduced Gluconeogenesis
- b) Reduced glycolysis
- c) Reduced lactate clearance
- d) Reduced renal function
- e) Liver failure?

Answer: A

California poison control system

The exact mechanism and role of metformin in the setting of MALA is a controversial subject. The mechanism for the reduction of hepatic gluconeogenesis is due to inhibition of mitochondrial respiratory chain complex I causing a decline in cellular ATP production. Gluconeogenesis, an energetically costly process, is reduced as the result of

an impaired energy state. It is this mitochondrial impairment that leads to a buildup of lactic acid, a substrate of stalled gluconeogenesis.

109)

There is a new drug for hypertension management. It will be compared to another drug and BP measures at 3 separate time intervals. To determine if there is a significant difference this requires what statistical test?

(normal distribution with 3 different measurements)

- a) Students t –test with Bonferroni correction
- b) Mann-Whitney U test
- c) Chi squared test

Answer: ?A

Type of Data				
Goal	Measurement (from Gaussian Population)	Rank, Score, or Measurement (from Non- Gaussian Population)	Binomial (Two Possible Outcomes)	Survival Time
Describe one group	Mean, SD	Median, interquartile range	Proportion	Kaplan Meier survival curve
Compare one group to a hypothetical value	One-sample <i>t</i> test	Wilcoxon test	Chi-square or Binomial test **	
Compare two unpaired groups	Unpaired <i>t</i> test	Mann-Whitney test	Fisher's test (chi-square for large samples)	Log-rank test or Mantel-Haenszel*
Compare two paired groups	Paired <i>t</i> test	Wilcoxon test	McNemar's test	Conditional proportional hazards regression*
Compare three or more unmatched groups	One-way ANOVA	Kruskal-Wallis test	Chi-square test	Cox proportional hazard regression**
Compare three or more matched groups	Repeated-measures ANOVA	Friedman test	Cochrane Q**	Conditional proportional hazards regression**
Quantify association between two variables	Pearson correlation	Spearman correlation	Contingency coefficients**	
Predict value from another measured variable	Simple linear regression or Nonlinear regression	Nonparametric regression**	Simple logistic regression*	Cox proportional hazard regression*
Predict value from several measured or binomial variables	Multiple linear regression* or Multiple nonlinear regression**		Multiple logistic regression*	Cox proportional hazard regression*

110) What is an absolute contraindication to sitting craniotomy?

- a) Small PFO
- b) Ventricular atrial shunt

Answer: A and B

Absolute CI

- cerebral ischaemia when upright and awake
- patent VA shunt
- PFO

Relative CI

- uncontrolled HTN
- age extremes (?Cutoff)
- COPD

111) A patient with sepsis has RR25 HR 110 Temp 38.9C What is qSOFA score

- a) 1
- b) 2
- c) 4
- d) 5
- e) 6

Answer: A

qSOFA	CURB65
<p>Criteria</p> <ul style="list-style-type: none"> • Abnormal mental status • RR \geq 22 • SBP \leq 100 	<p>Criteria</p> <ul style="list-style-type: none"> • Confusion • RR \geq 30 • SBP $<$ 90 <i>or</i> diastolic Bp \leq 60 mm • BUN $>$ 19 mg/dL • Age \geq 65 YO
<p>Interpretation</p> <ul style="list-style-type: none"> • $>$1: sepsis (mortality \sim10%) 	<p>Interpretation</p> <ul style="list-style-type: none"> • 0: 0.6% mortality • 1: 2.7% mortality • 2: 6.8% mortality • 3: 14% mortality • 4-5: 28% mortality

112) Which nerve distributions need to be covered for awake craniotomy?

- trigeminal, greater auricular, greater occipital
- trigeminal, greater occipital, lesser occipital
- ophthalmic, maxillary, greater auricular
- greater occipital, lesser occipital, auriculotemporal
- Trigeminal, greater occipital, posterior auricular

Answer: D

1. 3rd molar removal with LA block . Tingling of the chin noticed. What nerve is responsible?

Mental nerve

Other options cant remember

2. Post peri bulbar block tingling and ipsilateral upper lip. What is the nerve involved?

Inferior orbital

3. Contra indications for peri bulbar block.

INR 2.2

Staphyloma

Pterigeum

Scleral buckle

Axial length 24

4. Left temporal and R nasal visual field loss

R/optic tract

5. According to NAP 5, awareness under GA

1:8000

6. In 12 lead ECG, Where is V4 position

5th intercostal space Mid clavicular line

7. In thoracic wall block, what nerve is not blocked?

Supraclavicular nerve

Thoracodorsal nerve

Long thoracic nerve

Lateral pectoral nerve

Medial pectoral nerve

8. Scalp block include below nerves
Trigeminal, Greater occipital, Lesser occipital
Trigeminal, greater auricular, lesser occipital

9. Rpt DLT cuff herniation Q
Deflate cuff push in

10. Least risk of DVT what NSAID
Diclofenac Na

11. Bi directional Glen shunt
SVC- R/ pulmonary artery
SVC- main pulmonary artery

12. What can decrease the effect of Aspirin
Ibuprofen

13. What factor is deficient in Cryo
Factor V111
VWB

14. Prothrombinex dose to decrease INR from 2 to
1.5
25 mg/kg
50mg/kg

15. What is the blood test of choice to test Dabigatran
activity
ACT

APTT
ROTEM
PT

16. what is the Dabigatran reversal agent
Idarucizumab

17. Not safe for MRI , Post MVR day 2
Epicardial wires
Sternal wires

18.Regarding Deep Brain Stimulator true EXCEPT
Not safe for MRI
Cannot use monopolar

19.Pulmonary haemorrhage immediate post bypass ?
recommence CPB

20. On CPB arterial line blood as same colour as
venous line. What to do?

Increased ventilation
Increased oxygen concentration of pump
Addition of oxygen to tubing
Wean by pass

21 Increased rate of mask acceptance in paediatric population least likely
clown doctors
midazolam
parental presence

22. Emergence delirium decreased by

Sevo induction/ maintenance transition to propofol

23. Mast cells

24. Tryptase checked in post anaphylaxis (RPT)
1, 4, 24 hours

25. For resistance anaphylaxis as per ANZCA guidelines EXCEPT
Metaraminol
Glucagon
Promethazine
Vasopressin

26. 14 yr old boy anaphylaxis, what is the dose of IM adrenaline
400mcg
500mcg
200mcg

27. Fiberoptic bronchoscope sterilization according to ANZCA

28. ECG 1 large square (5 small squares equivalent to

200msec- 0.5 mv

100msec- 0.5 mv

200msec 0.1mv

29. ECG ? Brugada/ ? WPW

v1, v2 ST elevation and TWI

30. Ketamine oral bio availability

10%

20%

60%

31. p value <0.05 in one study, if you were to repeat the same study maintaining same conditions chances of getting the same results

0.05%

50%

99%

0.95%

0.01%

32. Chlorhexidine used for skin prep for neuraxial block

4%

2%
0.5%
0.1%

33 Betadine Vs Chlorhexidine for skin prep for CNB
EXCEPT
less neurotoxicity

34. magnet on PPM + Defibrillator
Deactivate antitachycardia function+ not activate
asynchronous mode

35. Lung function FVC 4.3, FEV1 3.4
Can proceed for pneumonectomy or lobectomy

36. CPR chest compression effective <20%
20-30%

37. Gabapentin steady state
1 day
2 days
3 days

38. pyloric stenosis resuscitation goals in a child with

Wet nappies 2 per 12 hours and dry Mucous membranes

pH 7.4

Na 140

Cl 80

Uop 2 ml/kg

39 old man with anaemia , most likely blood picture

microcytic hypochromic

40. strong ion difference with normal albumin

+40

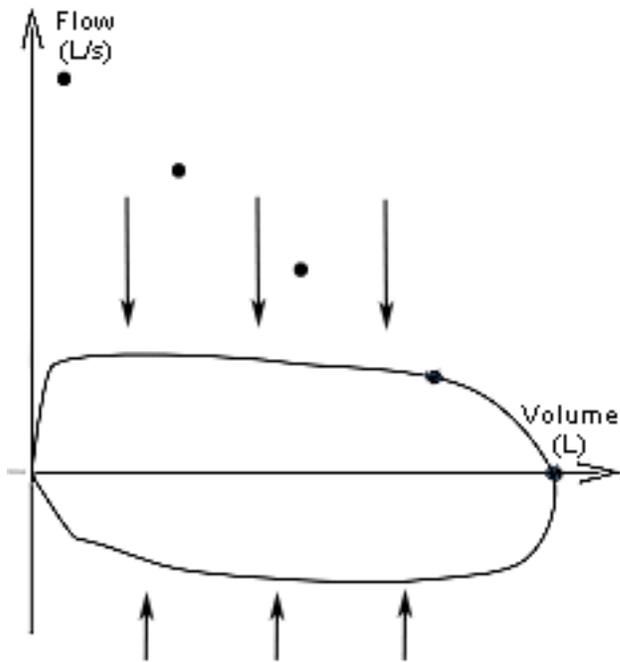
+20

0

-20

-40

41.



Tracheal stenosis
Lung transplant
COPD
Asthma
Vocal cord tumor