

QUESTION

| At what pressure is the pop-up valve released in bag and mask ventilation?

A 30-40 cm of H₂O

CORRECT

B 40-50 cm of H₂O

C 50-60 cm of H₂O

D 60-70 cm of H₂O

RIGHT ANSWER

OK

A. 30-40 cm of H₂O

WHY THIS IS RIGHT

In bag-and-mask ventilation, the pop-off (pressure-release) valve opens at 30-40 cm H₂O to prevent barotrauma.

This protects the neonatal lungs from excessive pressure during positive-pressure ventilation.

The valve can be overridden only in special situations like severe lung stiffness.

QUESTION

Arrange following parts of Anesthesia machine according to increasing pressure (from low to high):

1. Vaporizer mounting devices
2. Hanger yoke assembly
3. Flow meter assembly
4. Pipelines

A 1-2-3-4

B 1-3-4-2

CORRECT

C 2-3-4-1

D 2-4-3-1

RIGHT ANSWER

OK B. 1-3-4-2

WHY THIS IS RIGHT

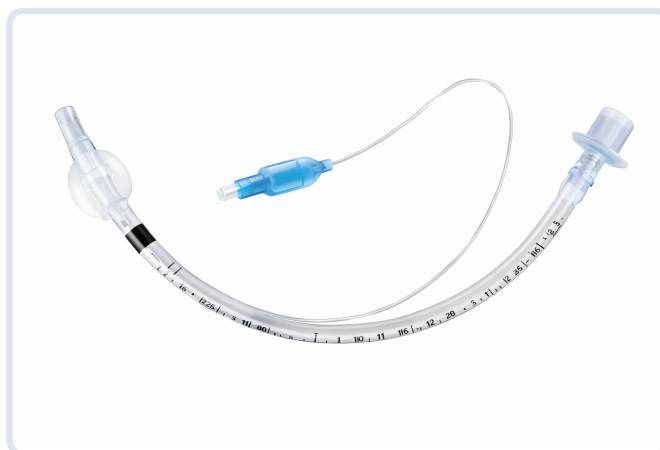
- In the anesthesia machine, components are arranged based on the pressure of gas they handle.
- The lowest pressure is in the low-pressure system, which includes the vaporizer mounting devices and flow meter assembly, where gas pressure is close to atmospheric. Among these, vaporizers are exposed to the lowest pressure, followed by flowmeters.
- Next is the intermediate-pressure system, which includes the pipelines (≈ 45 -55 psi).
- The highest pressure is in the high-pressure system, represented by the hanger yoke assembly, which directly receives cylinder pressure (up to ~ 2000 psi).

Why others are incorrect:

- Other sequences misplace either the pipeline or yoke relative to low-pressure components, violating standard anesthesia machine pressure classification.

QUESTION

Following tube adds additional airway resistance. This is due to:



A Circumference of the tube

B Length of the tube

C Diameter of the tube

CORRECT

D Curvature of the tube

RIGHT ANSWER

OK C. Diameter of the tube

WHY THIS IS RIGHT

Airway resistance is most strongly influenced by the internal diameter of the tube. According to Poiseuille's law, resistance is inversely proportional to the fourth power of the radius. Hence, even a small reduction in tube diameter causes a marked increase in resistance, significantly increasing the work of breathing and peak airway pressures. This is clinically important with small endotracheal tubes, pediatric tubes, or partially obstructed tubes (secretions, kinking).

Why others are incorrect:

- Circumference: Not a determinant of flow resistance.
- Length: Resistance increases linearly, but effect is modest compared to diameter.
- Curvature: Causes turbulence but contributes far less than diameter reduction.

QUESTION

Which of the following is measured by the device shown in the given image?



A Percentage of saturated Hb

CORRECT

B Oxygen content of the blood

C Partial pressure of oxygen

D Amount of inspired oxygen

RIGHT ANSWER

OK

A. Percentage of saturated Hb

WHY THIS IS RIGHT

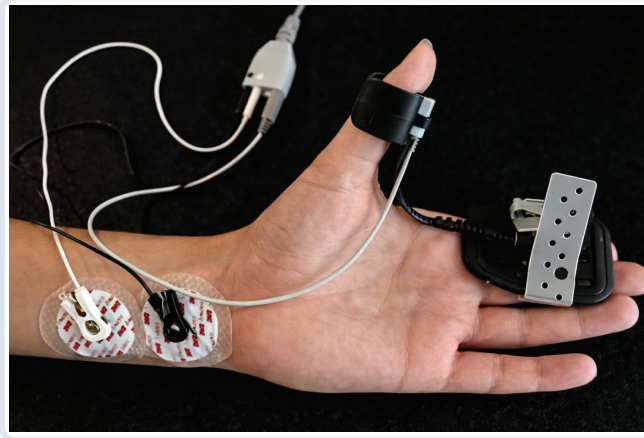
The device shown is a pulse oximeter, which non-invasively measures arterial oxygen saturation (SpO_2)-the percentage of hemoglobin bound to oxygen. It works on the principle of differential light absorption by oxyhemoglobin and deoxyhemoglobin at two wavelengths (red and infrared), providing continuous monitoring of oxygenation.

Why others are incorrect:

- Oxygen content of blood: Depends on Hb concentration and saturation; not measured directly.
- Partial pressure of oxygen (PaO_2): Requires arterial blood gas analysis.
- Amount of inspired oxygen (FiO_2): Set on the oxygen delivery device, not measured by pulse oximetry.

QUESTION

The image given below shows neuromuscular monitoring of the patient after anesthesia. What is the most commonly used cranial nerve for monitoring the same?



A Facial nerve

CORRECT

B Ulnar nerve

C Auriculotemporal nerve

D Great auricular nerve

RIGHT ANSWER

OK A. Facial nerve

WHY THIS IS RIGHT

In neuromuscular monitoring using facial muscle responses (typically orbicularis oculi or corrugator supercilii), the facial nerve (cranial nerve VII) is most commonly stimulated. Facial nerve monitoring is especially useful during anesthesia because facial muscles reflect laryngeal and diaphragmatic muscle recovery earlier, helping assess readiness for intubation and extubation. It is preferred when ulnar access is unavailable or during head-and-neck procedures.

Why others are incorrect:

- Ulnar nerve: Commonly used, but it is a peripheral nerve, not cranial.
- Auriculotemporal nerve: Sensory branch of trigeminal nerve; not used for NM monitoring.
- Great auricular nerve: Sensory cervical nerve; no role in neuromuscular blockade assessment.

QUESTION

Which of the following cylinders can be used in patients with acute exacerbation of bronchial asthma along with oxygen?

A Violet

B Blue

C Brown

CORRECT

D Orange

RIGHT ANSWER

OK C. Brown

WHY THIS IS RIGHT

In acute exacerbation of bronchial asthma, Heliox (helium-oxygen mixture) can be used along with oxygen to reduce airway resistance. Helium is a low-density gas, which improves laminar flow, decreases work of breathing, and enhances aerosol drug delivery in severe airway obstruction. Helium cylinders are color-coded brown, hence the correct choice.

Why others are incorrect:

- Option A (Violet): Used for medical air or special gas mixtures, not heliox.
- Option B (Blue): Represents nitrous oxide, which is contraindicated in asthma.
- Option D (Orange): Used for specific industrial gases, not for respiratory therapy.

QUESTION

| Which is not an obvious advantage of high-flow nasal cannula?



CORRECT

A Decreases need of intubation

B Reduces nasopharyngeal dead space

C Heating and humidification

D PEEP

RIGHT ANSWER

OK

A. Decreases need of intubation

WHY THIS IS RIGHT

While several studies suggest that high-flow nasal cannula (HFNC) *may* reduce intubation rates in selected patients, this is not an inherent or guaranteed advantage of the device itself. Intubation avoidance depends on patient selection, disease severity, and monitoring, and HFNC failure can delay necessary intubation if over-relied upon.

Why others are correct:

- Option B: HFNC delivers high flow that flushes nasopharyngeal dead space, improving ventilation efficiency.
- Option C: Gas is heated and humidified, improving comfort, secretion clearance, and tolerance.
- Option D: HFNC generates low-level PEEP (flow-dependent), contributing to alveolar recruitment, though variable.

QUESTION

What is the size of the endotracheal tube and blade to be used for resuscitation of a preterm neonate with weight 1.8 kg not responding to PPV?

CORRECT

A Size 0 blade, 3 mm tube

B Size 1 blade, 2.5 mm tube

C Size 0 blade, 2 mm tube

D Size 1 blade, 1.5 mm tube

RIGHT ANSWER

OK

A. Size 0 blade, 3 mm tube

WHY THIS IS RIGHT

For neonatal resuscitation, endotracheal tube size is chosen based on birth weight and gestational age. In a preterm neonate weighing ~1.8 kg, the recommended ETT size is 3.0 mm (uncuffed). A size 0 laryngoscope blade is appropriate for preterm and small neonates to provide optimal visualization of the glottis. Intubation is indicated when the baby does not respond to effective PPV.

Why others are incorrect:

- Option B- Size 1 blade, 2.5 mm tube: Blade too large; tube usually for <1 kg neonates.
- Option C- Size 0 blade, 2 mm tube: Tube too small, increases resistance and inadequate ventilation.
- Option D- Size 1 blade, 1.5 mm tube: Both blade and tube sizes are inappropriate for this weight.

QUESTION

A patient is undergoing modified radical neck dissection (MRND) for laryngeal malignancy. The patient developed hypotension along with cardiac arrhythmia suddenly. Which of the following is the most likely image of his capnography?

- A** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KMPX6CV7DZAG3K2CQ1MM4BET.jpg
- B** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KMPX6D00JN9KQ1K94Q755WH9.jpg
- C** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KMPX6D31HT6DZF2NV0JN8933.jpg CORRECT
- D** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KMPX6D8VK800FR1R1N6V8QFG.jpg

RIGHT ANSWER

- OK** **C.** https://corebtr-assets-production.s3.ap-south-1.amazonaws.com/questions_image/option/01KMPX6D31HT6DZF2NV0JN8933.jpg

WHY THIS IS RIGHT

Capnography showing a sudden fall in ETCO₂ with reduced waveform amplitude (acute drop)

During modified radical neck dissection (MRND), manipulation near the carotid sinus can trigger a carotid sinus reflex, causing sudden bradycardia, hypotension, and arrhythmias. This leads to an abrupt reduction in cardiac output, which is immediately reflected on capnography as a sudden fall in ETCO₂, often with a low, dampened waveform. Capnography is a sensitive early indicator of acute circulatory compromise.

Why other waveform patterns are incorrect:

- Gradual ETCO₂ rise: Seen with hypoventilation or CO₂ rebreathing.
- Shark-fin pattern: Indicates bronchospasm or airflow obstruction.
- Absent ETCO₂: Suggests esophageal intubation or complete apnea, not reflex hypotension.

QUESTION

| Identify the correct size and material of MRI compatible gas cylinder

- A** Stainless steel, Size E
- B** Molybdenum steel, Size A
- C** Aluminium, Size E
- D** Hard plastic, Size A

CORRECT

RIGHT ANSWER

- OK** **C. Aluminium, Size E**

WHY THIS IS RIGHT

MRI suites require non-ferromagnetic equipment to prevent projectile accidents and image distortion. Aluminium gas cylinders are MRI-compatible because aluminium is non-magnetic. Size E cylinders are commonly used in anesthesia and critical care as they provide an adequate oxygen supply while remaining portable and suitable for MRI environments. Hence, aluminium Size E cylinders are the standard choice for MRI-compatible gas delivery.

Why others are incorrect:

- Stainless steel: Ferromagnetic; unsafe in MRI.
- Molybdenum steel: Magnetic and contraindicated in MRI.
- Hard plastic, Size A: Plastic cylinders are uncommon for medical gases and Size A is impractically small for anesthesia use.

QUESTION

| How to measure the size of the following device?



- A** Incisor teeth and tragus of the ear
- B** Corner of mouth and angle of mandible CORRECT
- C** Tip of nose and angle of mandible
- D** Ala of nose and angle of mandible

RIGHT ANSWER

OK

B. Corner of mouth and angle of mandible

WHY THIS IS RIGHT

This method is used to determine the correct size of an oropharyngeal airway (OPA). Measuring from the corner of the mouth to the angle of the mandible ensures that the airway sits properly above the epiglottis without pushing it posteriorly. Correct sizing prevents airway obstruction, gagging, or trauma and allows effective airway patency in unconscious patients.

QUESTION

| What is the composition of Amsorb?

CORRECT

A Ca(OH)_2 , CaCl_2 , CaSO_4 **B** Ca(OH)_2 , NaOH , KOH **C** Ca(OH)_2 , NaOH , CaCl_2 **D** Ba(OH)_2 , CaSO_4

RIGHT ANSWER

OK **A. Ca(OH)_2 , CaCl_2 , CaSO_4**

WHY THIS IS RIGHT

Amsorb is a modern CO_2 absorbent composed mainly of calcium hydroxide, with calcium chloride and calcium sulfate added to improve moisture retention and hardness. Importantly, it does not contain strong alkalis like sodium hydroxide or potassium hydroxide. This makes Amsorb safer because it does not degrade volatile anesthetics such as sevoflurane or desflurane into toxic byproducts (e.g., compound A or carbon monoxide), even when dry.

Why others are incorrect:

- $\text{Ca(OH)}_2 + \text{NaOH} + \text{KOH}$: Composition of traditional soda lime, not Amsorb.
- $\text{Ca(OH)}_2 + \text{NaOH} + \text{CaCl}_2$: Still contains NaOH , absent in Amsorb.
- $\text{Ba(OH)}_2 + \text{CaSO}_4$: Describes Baralyme, not Amsorb.

QUESTION

Regarding the procedure done with the needle shown below, which of the following is false?



- A Done in lateral recumbent position
- B Breath holding is not necessary
- C The bevel should face upwards while inserting the needle.

D Coagulopathy is not contraindication.

CORRECT

RIGHT ANSWER

OK

D. Coagulopathy is not contraindication.

WHY THIS IS RIGHT

The needle shown is used for lumbar puncture (LP). LP is commonly performed in the lateral recumbent position, which allows accurate measurement of opening pressure. Breath holding is not required because CSF pressure is not significantly affected by respiration. The bevel is kept facing upwards/parallel to dural fibers to reduce dural trauma and post-LP headache.

However, coagulopathy is an absolute contraindication to lumbar puncture due to the risk of spinal or epidural hematoma, which can cause permanent neurological injury.

Why others are correct:

- Lateral position is standard for LP
- Breath holding is unnecessary
- Bevel orientation reduces CSF leak

QUESTION

Regarding soda lime used in anesthesia breathing circuits, which of the following statements are correct except ?

A It absorbs CO_2 by producing heat (exothermic reaction)

B It can degrade sevoflurane to compound-A when dry

C It turns violet when exhausted due to indicator dye

D It absorbs nitrogen from the circuit during anesthesia

CORRECT

RIGHT ANSWER

OK D. It absorbs nitrogen from the circuit during anesthesia

WHY THIS IS RIGHT

Soda lime absorbs carbon dioxide, not nitrogen. CO_2 reacts with water and hydroxides in soda lime, forming carbonates in an exothermic reaction, thereby removing CO_2 from the breathing circuit. Nitrogen is inert and is neither absorbed nor chemically altered by soda lime during anesthesia.

Why others are incorrect (i.e., they are true statements):

- Option A: CO_2 absorption is exothermic and produces heat.
- Option B: Dry soda lime can degrade sevoflurane to compound A.
- Option C: Exhaustion is indicated by a violet color change due to pH-sensitive dye.

QUESTION

What is considered the gold standard technique for confirmation of the correct placement of an endotracheal tube (ETT)?

- A Capnography showing sustained ETCO₂
- B Chest auscultation over bilateral lung fields
- C Observation of symmetrical chest expansion
- D **Fiberoptic bronchoscopy visualization of the tube in the trachea**

CORRECT

RIGHT ANSWER

- OK **D. Fiberoptic bronchoscopy visualization of the tube in the trachea**

WHY THIS IS RIGHT

Fiberoptic bronchoscopy is the true gold standard because it allows direct visual confirmation of the endotracheal tube passing through the vocal cords and lying within the trachea. It is definitive and independent of pulmonary blood flow or ventilation, making it especially valuable in low-flow states.

Fiberoptic bronchoscopy is the gold standard because it allows direct visualization of:

- tracheal rings
- carina
- depth & position of the tube

Why others are incorrect:

- Option A: Capnography is the *clinical gold standard*, but false negatives can occur in cardiac arrest or low perfusion.
- Option B: Auscultation is subjective and unreliable due to transmitted sounds.
- Option C: Chest rise can occur with esophageal or gastric ventilation and is not definitive.

QUESTION

According to the Difficult Airway Society (DAS) guidelines for unanticipated difficult intubation in adults, which of the following represents the correct sequence of airway interventions prioritizing oxygenation?

- A** Intubation -> Front of neck access -> SAD -> Face mask ventilation
- B** Face mask ventilation -> Intubation attempts -> SAD -> Front of neck access CORRECT
- C** Intubation -> SAD -> Face mask ventilation -> Front of neck access
- D** SAD -> Intubation -> Front of neck access -> Face mask ventilation

RIGHT ANSWER

- OK** **B. Face mask ventilation -> Intubation attempts -> SAD -> Front of neck access**

WHY THIS IS RIGHT

According to the Difficult Airway Society (DAS) guidelines, airway management in unanticipated difficult intubation prioritizes oxygenation over intubation. Initial face mask ventilation ensures oxygen delivery. If intubation fails, a supraglottic airway device (SAD) is inserted to maintain oxygenation. Front-of-neck access (FONA) is the final rescue step in a “can’t intubate, can’t oxygenate” scenario.

Why others are incorrect:

- Option A: FONA is last-resort, not early.
- Option C: Skips initial mask ventilation priority.
- Option D: SAD is not first-line before basic mask ventilation.

QUESTION

Which of the following best describes the ideal position of a supraglottic airway device (SAB)?

- A The tip lies in the vallecula pushing the epiglottis downward
- B The tip lies inside the laryngeal inlet causing partial obstruction
- C The tip lies lateral to the glottis in the piriform fossa

D The tip lies in front of the esophagus with the aperture aligned over the glottic opening

CORRECT

RIGHT ANSWER

OK D. The tip lies in front of the esophagus with the aperture aligned over the glottic opening

WHY THIS IS RIGHT

An ideally positioned supraglottic airway device (SAD) sits with its distal tip resting against the upper esophageal sphincter, effectively sealing the esophagus, while the ventilatory aperture aligns directly over the glottic opening. This positioning allows unobstructed airflow into the trachea, minimizes gastric insufflation, and ensures effective ventilation without entering the larynx.

Why others are incorrect:

- Option A: Vallecular placement describes some intubating airways, not standard SAD position.
- Option B: Entry into the laryngeal inlet would obstruct airflow and cause trauma.
- Option C: Piriform fossa placement indicates malposition with poor ventilation.

QUESTION

A 62-year-old obese male with OSA is scheduled for awake fiberoptic intubation. To increase apneic time and improve oxygenation during induction, the anesthesiologist applies THRIVE. Which mechanism best explains its benefit?

CORRECT

A Generates positive end-expiratory pressure and apneic oxygenation

B Increases FiO_2 but reduces CO_2 clearance

C Increases minute ventilation without airway instrumentation

D Allows spontaneous ventilation through bypass circuits

RIGHT ANSWER

OK **A. Generates positive end-expiratory pressure and apneic oxygenation**

WHY THIS IS RIGHT

THRIVE = High-flow nasal oxygen during apnea

Benefits:

- extends safe apnea time
- provides low-level PEEP
- humidified + warmed gas
- useful in obese + OSA + difficult airway

CO_2 : not fully eliminated, accumulates but slower

Transnasal Humidified Rapid Insufflation Ventilatory Exchange

QUESTION

A newly renovated operating theatre is having essential anesthesia equipment installed. During routine inspection of the anesthesia workstation, the technician suddenly develops lightheadedness and nausea. He immediately switches off the anesthesia machine and leaves the room. Which of the following is the most likely cause of his symptoms?

A Leakage of Isoflurane

B Leakage of Halothane

C Leakage of Nitrous Oxide

CORRECT

D Leakage of Sevoflurane

RIGHT ANSWER

OK C. Leakage of Nitrous Oxide

WHY THIS IS RIGHT

Nitrous oxide exposure causes:

- dizziness
- nausea
- euphoria / disorientation
- headache
- diffusion hypoxia (with sudden discontinuation)

It is also the most common anesthetic gas associated with chronic occupational exposure issues, especially in poorly scavenged OTs.

QUESTION

| TOF ratio of 0.9 indicates:

CORRECT

- A** Minimal blockade; safe for extubation
- B** Moderate blockade; not safe for extubation
- C** Deep blockade
- D** No blockade

RIGHT ANSWER

- OK** **A. Minimal blockade; safe for extubation**

WHY THIS IS RIGHT

- Current guidelines: TOF ratio ≥ 0.9 -> adequate recovery.
- A TOF (Train-of-Four) ratio ≥ 0.9 indicates adequate recovery from neuromuscular blockade with minimal residual paralysis. At this level, upper airway muscle tone, protective airway reflexes, and respiratory muscle strength are sufficiently restored, making it safe for extubation. Current anesthesia guidelines emphasize objective neuromuscular monitoring and recommend a TOF ratio of at least 0.9 to reduce postoperative residual curarization and related complications such as hypoventilation or airway obstruction.

Why others are incorrect:

- Option B: Moderate blockade corresponds to TOF ratios well below 0.9.
- Option C: Deep blockade shows absent or very weak TOF responses.
- Option D: "No blockade" implies complete recovery, but TOF 0.9 still allows minimal residual effect.

QUESTION

A 54-year-old woman is undergoing laparoscopic hysterectomy under general anesthesia. BIS monitoring is applied. The BIS value reads 85 during trocar insertion. Which interpretation is most appropriate?

- A Patient is adequately anesthetized
- B Patient is deeply anesthetized
- C Patient has regained consciousness/light anesthesia**
- D Patient is in burst suppression

CORRECT

RIGHT ANSWER

- OK
- C. Patient has regained consciousness/light anesthesia**

WHY THIS IS RIGHT

BIS (Bispectral Index) estimates depth of hypnosis. Typical targets for general anesthesia are ~40-60. A BIS of 85 indicates light anesthesia/near-awake state, with high risk of awareness and inadequate hypnotic depth during a noxious stimulus like trocar insertion. The anesthetic should be deepened (increase volatile/propofol, ensure analgesia) while assessing clinical signs and artifacts.

BIS Values	Condition
100	Awake
65-85	Sedation
45-65	General anaesthesia
< 40	Burst suppression

QUESTION

A 32-year-old male presents with severe respiratory distress due to aspiration risk and requires rapid sequence intubation. Which is the correct procedural sequence?

A Preoxygenation -> Induction -> Paralysis -> Intubation -> Confirmation -> Post-intubation care

CORRECT

B Induction -> Preoxygenation -> Paralysis -> Intubation -> Confirmation -> Post-intubation care

C Paralysis -> Induction -> Intubation -> Post-intubation care -> Confirmation

D Preoxygenation -> Intubation -> Paralysis -> Induction -> Confirmation

RIGHT ANSWER

OK A. Preoxygenation -> Induction -> Paralysis -> Intubation -> Confirmation -> Post-intubation care

WHY THIS IS RIGHT

Rapid sequence intubation (RSI) follows a strict, time-critical sequence to minimize aspiration and hypoxia. Preoxygenation maximizes oxygen reserves. Induction with a sedative ensures unconsciousness, followed immediately by paralysis to facilitate optimal intubating conditions. This is followed by intubation, confirmation of tube placement (end-tidal CO₂, chest rise, auscultation), and post-intubation care including ventilation, sedation, and securing the tube.

QUESTION

During anaesthesia, a patient is encountered in a 'cannot intubate, cannot ventilate' (CICV) situation. What is the immediate next step in management?

A Administer succinylcholine and retry intubation

B Perform needle cricothyroidotomy

CORRECT

C Insert a supraglottic airway device

D Wake the patient up / nasal airway

RIGHT ANSWER

OK B. Perform needle cricothyroidotomy

WHY THIS IS RIGHT

A true CICV scenario represents impending hypoxic arrest. The priority is not intubation anymore, it's oxygenation immediately. When both intubation and ventilation fail, the immediate lifesaving action is emergency front-of-neck access, most rapidly done via needle cricothyroidotomy. Attempts at further intubation or supraglottic devices waste critical time.

Option A- Give succinylcholine and retry intubation

Wrong. Paralysis may already be present and repeated attempts worsen hypoxia.

Option C- Insert supraglottic airway device

Would be correct in failed intubation *if ventilation is possible*.

QUESTION

In the given image, what is the primary function of the marked structure?



- A Facilitation of vocal cord visualization
- B Monitoring airway pressure
- C Prevention of air leakage and aspiration**
- D Suctioning of lower respiratory tract secretions

CORRECT

RIGHT ANSWER

OK

C. Prevention of air leakage and aspiration

WHY THIS IS RIGHT

The cuff of a tracheostomy tube forms a seal against the tracheal wall, primarily preventing air leakage during ventilation and reducing the risk of aspiration. This ensures effective delivery of positive-pressure ventilation while protecting the airway from oropharyngeal secretions.

QUESTION

Identify the mask in the image below?



- A Venturi mask
- B Hudson mask
- C Nebulizer mask
- D Non-rebreathing mask**

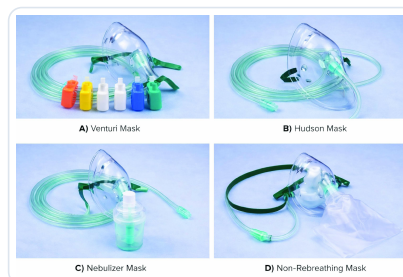
CORRECT

RIGHT ANSWER

OK **D. Non-rebreathing mask**

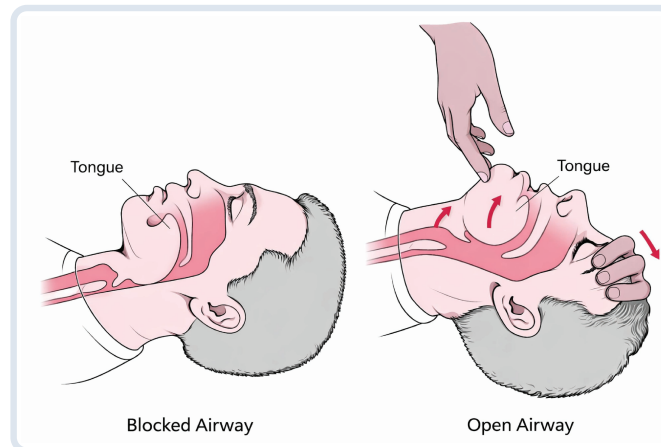
WHY THIS IS RIGHT

A non-rebreathing mask is identified by its reservoir bag and one-way valves, allowing delivery of high FiO_2 (up to 90-100%). These features distinguish it from Hudson, Venturi, or nebulizer masks.



QUESTION

Identify the maneuver being performed in the given image?



A Head tilt, chin lift

CORRECT

B Jaw thrust

C Head extension

D In line manual stabilization

RIGHT ANSWER

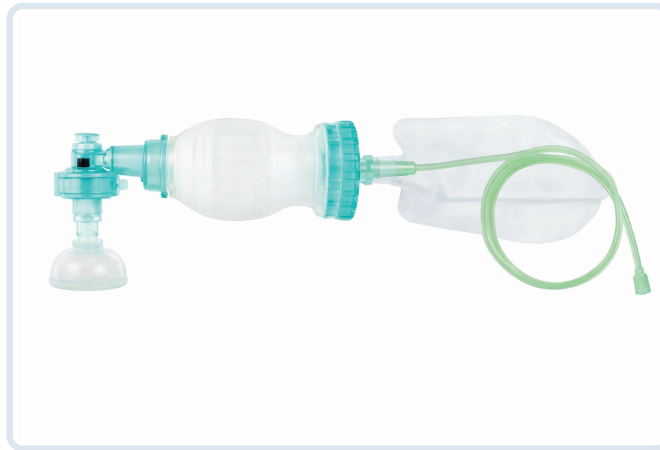
OK A. Head tilt, chin lift

WHY THIS IS RIGHT

The image depicts the head tilt-chin lift maneuver, where one hand tilts the forehead back while the other lifts the chin. This is the standard method to open the airway in an unresponsive patient without suspected cervical spine injury.

QUESTION

Relieving pressure of pop off valve in this device is?



A 10-20 mm Hg

B 10-20 cm H₂O

C 30-40 mm Hg

D 30-40 cm H₂O

CORRECT

RIGHT ANSWER

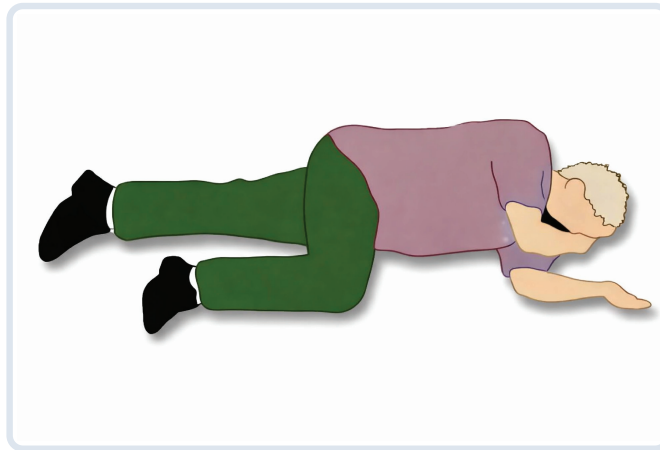
OK D. 30-40 cm H₂O

WHY THIS IS RIGHT

In an Ambu bag, the pop-off (pressure-release) valve opens at 30-40 cm H₂O to prevent excessive airway pressures and protect the lungs from barotrauma. This safety limit aligns with standard paediatric and adult manual ventilation devices.

QUESTION

| This position is given in which patients?



- A** Pulse absent Breathing present
- B** Pulse absent Breathing absent
- C** Unconscious with Pulse present Breathing present CORRECT
- D** Conscious with Pulse present Breathing present

RIGHT ANSWER

OK

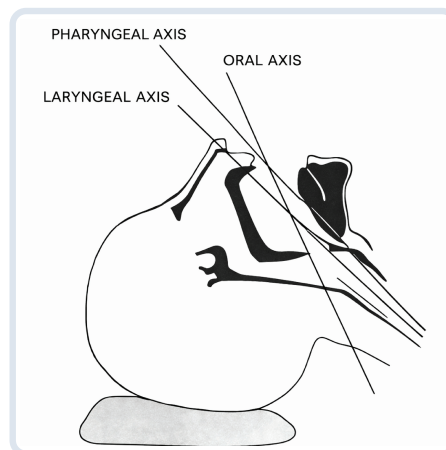
C. Unconscious with Pulse present Breathing present

WHY THIS IS RIGHT

The position shown is the recovery position, used for an unconscious patient who has a pulse and is breathing. It maintains airway patency, prevents tongue obstruction, and reduces the risk of aspiration by allowing secretions to drain.

QUESTION

| What is true about this position?



A Sniffing position for intubation

CORRECT

B Ideal position for Bougie insertion

C Ideal position for Neurosurgery

D Neck position for intubation

RIGHT ANSWER

OK

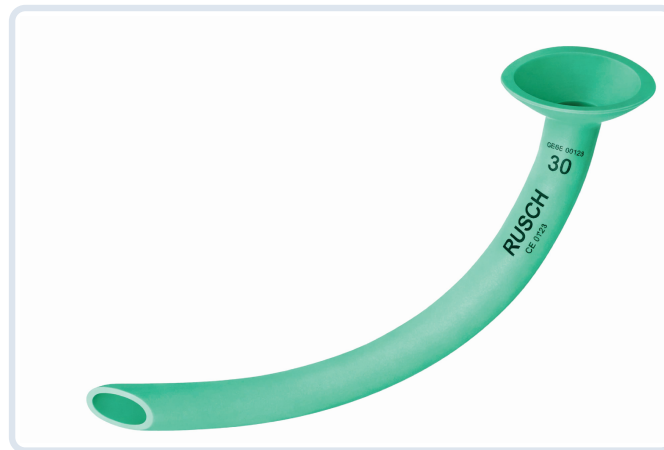
A. Sniffing position for intubation

WHY THIS IS RIGHT

The image depicts the sniffing position, where the neck is flexed and the head is extended at the atlanto-occipital joint. This alignment brings the oral, pharyngeal, and laryngeal axes into a more favourable line, making it the standard and most effective position for endotracheal intubation.

QUESTION

Identify the instrument:



- A** Oropharyngeal airway
- B** Ovassapian airway
- C** Nasopharyngeal airway
- D** Uncuffed endotracheal tube

CORRECT

RIGHT ANSWER

OK

C. Nasopharyngeal airway

WHY THIS IS RIGHT

A nasopharyngeal airway is a soft, flexible tube inserted through the nostril to maintain airway patency, especially in conscious or semi-conscious patients who cannot tolerate an oropharyngeal airway. Its bevelled tip and flared end distinguish it from other airway adjuncts.



QUESTION

Which of the following statements is correct about the procedure shown in the image below?



- A** It can be used for effective ventilation up to 6 hours
- B** It is used to measure central venous pressure
- C** It should be followed by tracheostomy
- D** Work of breathing will be more than face mask ventilation

CORRECT

RIGHT ANSWER

- OK** **C. It should be followed by tracheostomy**

WHY THIS IS RIGHT

The image represents needle cricothyrotomy, an emergency temporary airway procedure. It provides short-term oxygenation only and must be followed by a definitive airway such as tracheostomy. It cannot ventilate for hours, does not measure CVP, and work of breathing is not less than with a face mask.

QUESTION

A patient diagnosed with acute respiratory distress syndrome (ARDS) has a $\text{PaO}_2/\text{FiO}_2$ ratio below 100, consistent with severe ARDS. What should be the next appropriate ventilatory management strategy for this patient?

- A Low PEEP and high tidal volume
- B High PEEP and low tidal volume**
- C High tidal volume with prolonged expiratory pause
- D Immediate prone positioning

CORRECT

RIGHT ANSWER

- OK
- B. High PEEP and low tidal volume**

WHY THIS IS RIGHT

Severe ARDS ($\text{PaO}_2/\text{FiO}_2 < 100$) requires lung-protective ventilation, which includes low tidal volume (≈ 6 mL/kg PBW) to prevent volutrauma, barotrauma and high PEEP to maintain alveolar recruitment and improve oxygenation. Prone positioning is helpful but not the *first* step; the cornerstone strategy remains high PEEP + low tidal volume.

QUESTION

A child was being delivered oxygen by nasal canula at 3L/min. What is the FiO₂ being delivered?

A 25%

B 30%

CORRECT

C 40%

D 45%

RIGHT ANSWER

OK

B. 30%

WHY THIS IS RIGHT

FiO₂ increases by about 4% per litre of oxygen flow.

Starting from room air (21%): Nasal cannula delivers FiO₂ $\approx 21\% + 4\%$ per L/min.

At 3 L/min $\rightarrow 21\% + (3 \times 4\%) = 32\%$, but standard clinical rounding places it closest to 30% for exam purposes.

QUESTION

A child presents with acute respiratory distress. On examination, the abdomen was scaphoid. Which of the following should not be performed in this patient:

A PPV with ETT

B Bag and mask ventilation

CORRECT

C Oxygen therapy

D Intubation

RIGHT ANSWER

OK B. Bag and mask ventilation

WHY THIS IS RIGHT

A scaphoid abdomen with respiratory distress suggests congenital diaphragmatic hernia, where bag-mask ventilation can worsen gastric insufflation and further compromise lung expansion. Oxygen and intubation with gentle PPV are appropriate; bag-mask ventilation must be avoided.

QUESTION

Identify the 2nd generation supraglottic airway device from the options given below.

A LMA Fastrach

B LMA Flexible

C LMA Proseal

CORRECT

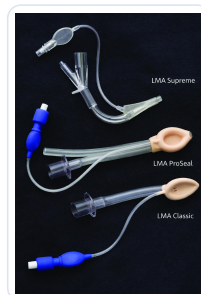
D AMBU LMA

RIGHT ANSWER

OK C. LMA Proseal

WHY THIS IS RIGHT

LMA ProSeal is a second-generation supraglottic airway featuring a gastric drainage channel, improved oropharyngeal seal pressure, and enhanced protection against aspiration. The other LMAs listed are first-generation devices without gastric access.



QUESTION

| **AMBU AURA40 is what generation LMA?**

A First

CORRECT

B Second

C Third

D Fourth

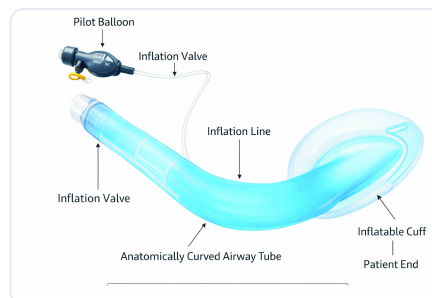
RIGHT ANSWER

OK

A. First

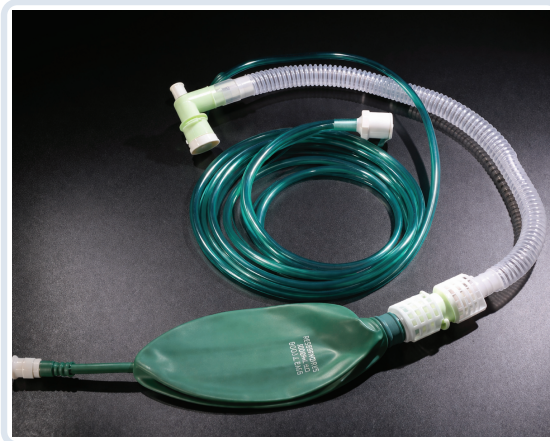
WHY THIS IS RIGHT

AMBU AURA40 is a first-generation LMA because it has a single airway tube, lacks a gastric drainage channel, and functions as a reusable variant of the classic LMA. The “40” denotes up to 40 uses (made of silicone and can be autoclaved up to 40 times), unlike second-generation devices such as AuraGain that include gastric access for reduced aspiration risk.



QUESTION

| Jackson Rees circuit is used in:



A Paediatric controlled ventilation

CORRECT

B Adult controlled ventilation

C Obstetric ventilation

D Cardiac patients

RIGHT ANSWER

OK

A. Paediatric controlled ventilation

WHY THIS IS RIGHT

Jackson Rees (Mapleson F) circuit is a low-resistance, minimal dead-space system ideal for paediatric anaesthesia, including controlled and spontaneous ventilation. Its open-ended reservoir bag allows effective manual control, making it preferred for children who have less tidal volume, cannot tolerate high resistance and are sensitive to dead space rather than adults or special populations like obstetric or cardiac patients.

QUESTION

A 48-year-old male with a history of severe obstructive sleep apnea (OSA) and a body mass index (BMI) of 45 presents for an emergency exploratory laparoscopy for an incarcerated inguinal hernia. He undergoes an uncomplicated induction and placement of an oral endotracheal tube via video laryngoscopy. The ideal volatile anesthetic for maintenance would be?

A The most lipophilic volatile agent

B The least soluble volatile anesthetic

CORRECT

C A volatile anesthetic with analgesic properties should be used to limit the amount of opioids required for the patient

D A highly metabolized volatile anesthetic

RIGHT ANSWER

OK

B. The least soluble volatile anesthetic

WHY THIS IS RIGHT

In a morbidly obese patient with severe OSA, the ideal volatile agent is one with low blood-gas and fat-blood solubility, such as desflurane. Low solubility allows rapid titration, faster emergence, and quicker recovery of airway reflexes, which is crucial in OSA to reduce postoperative airway obstruction and hypoventilation. Highly soluble or lipophilic agents accumulate in adipose tissue, causing delayed emergence and prolonged respiratory depression.

Why others are incorrect:

- Option A- Most lipophilic agent: Accumulates in fat -> delayed recovery.
- Option C- Analgesic volatile: Volatiles have minimal true analgesia.
- Option D-Highly metabolized agent: Increases metabolic burden without benefit.

QUESTION

| All of the following anaesthetic agents can be used in bronchial asthma except:

A Halothane

B Sevoflurane

C Propofol

D Thiopentone

CORRECT

RIGHT ANSWER

OK D. Thiopentone

WHY THIS IS RIGHT

Thiopentone is not preferred in bronchial asthma because it can cause histamine release, leading to bronchospasm and increased airway resistance. This makes it unsafe in patients with reactive airways.

Why others are correct:

- Option A- Halothane: Has bronchodilatory properties and suppresses airway reflexes, making it suitable in asthma.
- Option B- Sevoflurane: A potent bronchodilator, non-pungent, and commonly used for induction and maintenance in asthmatics.
- Option C- Propofol: Suppresses airway reflexes and has anti-bronchoconstrictive effects, making it safe and preferred for induction.

QUESTION

| All of the following are contraindications in IVRA except:

A Bupivacaine

B Sickle cell anemia

C Scleroderma

D Mepivacaine

CORRECT

RIGHT ANSWER

OK

D. Mepivacaine

WHY THIS IS RIGHT

In IVRA (Bier's block), mepivacaine can be used safely as it is an amide local anesthetic with a relatively favorable cardiovascular profile compared to bupivacaine. IVRA requires drugs with rapid onset and low cardiotoxicity.

Why others are contraindications:

- Option A- Bupivacaine: Absolutely contraindicated due to severe cardiotoxicity if systemic leakage occurs.
- Option B- Sickle cell anemia: Tourniquet-induced hypoxia and acidosis can precipitate sickling crisis.
- Option C- Scleroderma: Associated with poor peripheral circulation, increasing risk of ischemic complications.

QUESTION

| All of the following can be given by intra-tracheal route except:

A Epinephrine

B Atropine

C Naloxone

D N-Acetyl cysteine

CORRECT

RIGHT ANSWER

OK D. N-Acetyl cysteine

WHY THIS IS RIGHT

Only a limited group of emergency drugs can be administered via the intra-tracheal (ETT) route during resuscitation when IV/IO access is unavailable. These are remembered by the mnemonic NAVEL. N-acetyl cysteine (NAC) is not absorbed effectively through the tracheobronchial mucosa and has no role in intra-tracheal drug delivery, hence it cannot be given by this route.

Why others are incorrect (they CAN be given):

- Option A- Epinephrine: Effective via ETT in cardiac arrest (higher dose required).
- Option B- Atropine: Can be administered intratracheally in emergencies.
- Option C- Naloxone: Lipid-soluble and absorbable through airway mucosa.

QUESTION

A 70 kg elderly athlete undergoes surgery and is administered succinylcholine due to the unavailability of vecuronium. A total of 640 mg of succinylcholine is given intermittently. During recovery, the patient is unable to breathe spontaneously or move limbs. What is the explanation?

A Pseudocholinesterase deficiency increasing action of succinylcholine

B Phase 2 blockade produced by succinylcholine

CORRECT

C Undiagnosed muscular dystrophy and muscular weakness

D Muscular weakness due to fasciculation produced by succinylcholine

RIGHT ANSWER

OK

B. Phase 2 blockade produced by succinylcholine

WHY THIS IS RIGHT

A total dose of 640 mg succinylcholine in a 70-kg patient is excessive and can convert the usual phase I depolarizing block into a phase II (desensitizing) block. Phase II block resembles a non-depolarizing neuromuscular block, with flaccid paralysis, TOF fade, and prolonged apnea, explaining the inability to breathe or move during recovery.

Why others are incorrect:

- Option A- Pseudocholinesterase deficiency: Causes prolonged block after *normal doses*, not massive cumulative dosing.
- Option C- Muscular dystrophy: Would cause hyperkalemia and cardiac issues, not isolated prolonged paralysis.
- Option D- Fasciculations: Cause transient myalgia, not prolonged apnea or paralysis.

QUESTION

| All are true about Propofol except:

- A** It is antipruritic
- B** It is an emulsion with egg lecithin present in it
- C** It is considered the best agent for day care surgery
- D** It is associated with high incidence of nausea and vomiting

CORRECT

RIGHT ANSWER

OK

D. It is associated with high incidence of nausea and vomiting

WHY THIS IS RIGHT

- Propofol is well known for its antiemetic and antipruritic properties, making it highly favorable in anesthesia practice. It is formulated as a lipid emulsion containing egg lecithin, which allows intravenous administration. Because of its rapid onset, short duration of action, and smooth recovery profile, propofol is considered the agent of choice for day-care (ambulatory) surgery.
- Contrary to the statement, propofol is associated with a ****low incidence of postoperative nausea and vomiting (PONV)**** and is often used to reduce PONV risk.

Why others are correct:

- Option A: Antipruritic - true
- Option B: Egg lecithin emulsion - true
- Option C: Ideal for day-care surgery - true

QUESTION

| Which of the following statements about sugammadex is false?

- A** Sugammadex is a reversal agent for rocuronium and vecuronium.
- B** Sugammadex does not reverse the effect of succinylcholine.
- C** It is safe for use in patients with renal impairment
- D** Side effects include tachycardia, blurring of vision

CORRECT

RIGHT ANSWER

OK

C. It is safe for use in patients with renal impairment

WHY THIS IS RIGHT

Sugammadex is a selective relaxant binding agent that encapsulates rocuronium and vecuronium, rapidly reversing neuromuscular blockade. It does not reverse succinylcholine, as it only binds aminosteroid neuromuscular blockers. However, sugammadex is primarily renally excreted, and in patients with severe renal impairment, the sugammadex-rocuronium complex may accumulate. Therefore, it is not considered safe or routinely recommended in significant renal failure.

Why others are correct:

- Reverses rocuronium and vecuronium - true.
- Does not reverse succinylcholine - true.
- Side effects may include cardiovascular and visual disturbances (though bradycardia is more common than tachycardia).

QUESTION

Which inhalational agent is safe for a patient with Chronic Kidney Disease (CKD) on dialysis who is undergoing surgery?

A Methoxyflurane

B Desflurane

CORRECT

C Enflurane

D Sevoflurane

RIGHT ANSWER

OK B. Desflurane

WHY THIS IS RIGHT

Desflurane is the safest inhalational anesthetic in patients with CKD on dialysis because it undergoes minimal metabolism (<0.02%) and does not produce nephrotoxic fluoride ions or compound A. It is eliminated almost entirely via the lungs, making renal function irrelevant to its clearance. Hence, it is preferred when renal safety is a major concern.

Why others are incorrect:

- Option A- Methoxyflurane: Causes high fluoride ion release -> severe nephrotoxicity.
- Option C- Enflurane: Undergoes hepatic metabolism with fluoride production -> renal risk.
- Option D- Sevoflurane: Can form compound A, which is potentially nephrotoxic, especially in low-flow anesthesia.

QUESTION

25-year-old male patient was given cisatracurium for neuromuscular blockade. Which of the following is not true regarding the class to which the drug belongs?

- A Competitive inhibitor at acetylcholine receptors
- B Their action is potentiated by Mg^{2+} and antagonized by Ca^{2+}
- C Metabolized by pseudo cholinesterase
- D Characteristic train of four fade present

CORRECT

RIGHT ANSWER

- OK
- C. Metabolized by pseudo cholinesterase

WHY THIS IS RIGHT

- Cisatracurium belongs to non-depolarizing neuromuscular blocking agents. These drugs act as competitive antagonists at nicotinic acetylcholine receptors at the neuromuscular junction, producing paralysis. Their effect is potentiated by magnesium (reduces ACh release) and antagonized by calcium. They characteristically show train-of-four (TOF) fade due to presynaptic inhibition of acetylcholine release.
- However, cisatracurium is not metabolized by pseudocholinesterase; it undergoes Hofmann elimination, an organ-independent process, making it safe in renal and hepatic failure.

Why others are correct:

- Competitive ACh antagonism - true
- Mg^{2+} potentiation/ Ca^{2+} antagonism - true
- TOF fade - true

QUESTION

Which of the following LA would not need dose readjustment in a case of liver failure?

A Lidocaine

B Procaine

CORRECT

C Bupivacaine

D Ropivacaine

RIGHT ANSWER

OK

B. Procaine

WHY THIS IS RIGHT

Procaine is an ester local anesthetic metabolized by plasma pseudocholinesterase, not by the liver. Therefore, its clearance is independent of hepatic function, and dose readjustment is not required in liver failure. This makes ester LAs safer than amide LAs in patients with significant hepatic impairment.

Why others are incorrect:

- Option A- Lidocaine: An amide LA extensively metabolized in the liver; reduced clearance in liver failure.
- Option C- Bupivacaine: Hepatic metabolism with high protein binding; risk of accumulation and cardiotoxicity.
- Option D- Ropivacaine: Also an amide LA requiring dose reduction due to liver-dependent metabolism.

QUESTION

Identify the defective enzyme in a patient whose dibucaine number was 20.

- A Acetylcholinesterase
- B Monoamine oxidase
- C Catechol-O-methyltransferase
- D Butyrylcholinesterase**

CORRECT

RIGHT ANSWER

- D. Butyrylcholinesterase**

WHY THIS IS RIGHT

A dibucaine number of 20 indicates a severely abnormal pseudocholinesterase enzyme, consistent with butyrylcholinesterase (plasma cholinesterase) deficiency. Dibucaine normally inhibits this enzyme; low inhibition (normal ≈ 80 , heterozygous $\approx 50-60$, homozygous atypical ≈ 20) predicts prolonged apnea after succinylcholine or mivacurium due to impaired drug metabolism.

Why others are incorrect:

- Option A- Acetylcholinesterase: Acts at synapses; not measured by dibucaine test.
- Option B- Monoamine oxidase: Involved in neurotransmitter metabolism, unrelated to anesthesia drugs.
- Option C- Catechol-O-methyltransferase: Metabolizes catecholamines; no role in succinylcholine metabolism.

QUESTION

An elderly man with Ca pancreas is receiving intravenous opioids for pain management. Which of the following drugs can be safely administered to him because of ceiling effect on respiratory depression?

A Morphine

B Buprenorphine

CORRECT

C Fentanyl

D Methadone

RIGHT ANSWER

OK

B. Buprenorphine

WHY THIS IS RIGHT

Buprenorphine is a partial μ -opioid receptor agonist with a ceiling effect on respiratory depression, making it safer in elderly or frail patients receiving opioids for cancer pain. Beyond a certain dose, further receptor activation does not significantly increase respiratory depression, reducing the risk of fatal hypoventilation while still providing effective analgesia.

Why others are incorrect:

- Option A: Morphine is a full μ -agonist with dose-dependent respiratory depression.
- Option C: Fentanyl is a potent full agonist and can cause profound respiratory depression.
- Option D: Methadone has no ceiling effect and carries a high risk of respiratory depression and QT prolongation.

QUESTION

A 48-year-old woman with CKD is scheduled for surgery. Her serum creatinine is 2.4 mg/dL and eGFR is 13. Which of the following opioids can be safely used in her?

A Pethidine

B Remifentanyl

CORRECT

C Alfentanil

D Morphine

RIGHT ANSWER

OK B. Remifentanyl

WHY THIS IS RIGHT

Remifentanyl is the safest opioid in severe CKD because it is metabolized by non-specific plasma and tissue esterases, not dependent on renal or hepatic function. It has an ultra-short, predictable context-sensitive half-time with no active metabolites, so accumulation does not occur even with very low eGFR. Hence, it is ideal for patients with advanced renal failure.

Why others are incorrect:

- Option A: Pethidine forms normeperidine, a neurotoxic metabolite that accumulates in renal failure.
- Option C: Alfentanil undergoes hepatic metabolism with reduced clearance in CKD.
- Option D: Morphine produces M6G and M3G, which accumulate and cause respiratory depression and neurotoxicity.

QUESTION

Activation of which receptor results in inhibition of ADH secretion and leads to diuresis?

A μ -opioid receptor agonist

B κ -opioid receptor agonist

CORRECT

C δ -opioid receptor agonist

D σ -receptor agonist

RIGHT ANSWER

OK B. κ -opioid receptor agonist

WHY THIS IS RIGHT

- Activation of κ -opioid receptors inhibits the release of antidiuretic hormone (ADH) from the posterior pituitary, leading to diuresis.
- This effect is classically associated with κ -agonists, which reduce water reabsorption in the collecting ducts by lowering ADH levels.
- Clinically, this explains the increased urine output seen with certain opioids acting on κ receptors.
- κ -receptor (KOR) agonists inhibit ADH (vasopressin) release from the posterior pituitary $\rightarrow$ $\downarrow$ free water reabsorption $\rightarrow$ $\uparrow$ water diuresis. This is called: " κ -agonist induced aquaresis".

Why others are incorrect:

- Option A: μ -opioid receptor agonists cause analgesia and respiratory depression, not ADH inhibition.
- Option C: δ -opioid receptors are mainly involved in analgesia and mood modulation.
- Option D: σ -receptors are not true opioid receptors and do not regulate ADH secretion.

QUESTION

Neuroleptic anesthesia (also known as neuroleptanalgesia) is produced by combining which of the following agents?

A Midazolam + Ketamine + Nitrous oxide

B Fentanyl + Droperidol + Nitrous oxide

CORRECT

C Morphine + Haloperidol + Oxygen

D Alfentanil + Propofol + Sevoflurane

RIGHT ANSWER

OK

B. Fentanyl + Droperidol + Nitrous oxide

WHY THIS IS RIGHT

- Droperidol = neuroleptic (antipsychotic)
- Fentanyl = potent opioid analgesic
- Nitrous oxide = added to enhance hypnosis & amnesia
- This combination was historically sold as a fixed preparation:
- Innovar = Fentanyl + Droperidol

Then N₂O was added during anesthesia -> neurolept anesthesia

QUESTION

Regarding opioids, all of the following statements are true except:

- A Tramadol can precipitate serotonin syndrome
- B Sufentanil is the most potent clinically used opioid
- C Opioids decrease prolactin and increase LH hormone secretion**
- D Methadone can cause QT interval prolongation

CORRECT

RIGHT ANSWER

OK

C. Opioids decrease prolactin and increase LH hormone secretion

WHY THIS IS RIGHT

Opioids actually:

- Increase prolactin
- Decrease LH
- Decrease testosterone
- Due to inhibition of hypothalamic GnRH pathways.

QUESTION

Intense craving experienced by individuals recovering from chronic alcoholism can be treated with a drug that acts through which of the following mechanisms?

A Agonist at β -adrenergic receptors

B Agonist at α -adrenergic receptors

C Agonist at serotonin receptors

D Antagonist at opioid receptors

CORRECT

RIGHT ANSWER

OK D. Antagonist at opioid receptors

WHY THIS IS RIGHT

Intense craving in individuals recovering from chronic alcoholism is effectively treated with naltrexone, an opioid receptor antagonist. Alcohol increases endogenous opioid release, which enhances dopamine-mediated reward pathways. By blocking μ -opioid receptors, naltrexone reduces the reinforcing and pleasurable effects of alcohol, thereby decreasing craving and risk of relapse. It is commonly used as part of relapse-prevention therapy in alcohol dependence.

Why others are incorrect:

- Option A: β -adrenergic agonists have no role in alcohol craving control.
- Option B: α -adrenergic agonists (e.g., clonidine) mainly reduce autonomic withdrawal symptoms.
- Option C: Serotonin agonists are not primary anti-craving agents in alcoholism.

QUESTION

Which IV induction agent is associated with the highest incidence of post-induction apnea, especially in neonates and young infants?

A Etomidate

B Ketamine

C Thiopental

D Propofol

CORRECT

RIGHT ANSWER

OK D. Propofol

WHY THIS IS RIGHT

Propofol has:

- Rapid onset (due to high lipid solubility)
- Short duration (due to rapid redistribution)

Because of this fast CNS penetration, it causes:

- immediate depression of respiratory drive
- loss of airway reflexes
- reduced tidal volume + respiratory rate
- transient apnea post induction

QUESTION

Which of the following IV induction agents is associated with the highest risk of histamine release and cardiovascular depression?

A Propofol

B Thiopental

CORRECT

C Ketamine

D Etomidate

RIGHT ANSWER

OK

B. Thiopental

WHY THIS IS RIGHT

- Thiopental -> causes histamine release -> vasodilation -> hypotension
- Effect is exaggerated in hypovolemic or shock patients
- Thiopental, a barbiturate, is most strongly associated with histamine release, leading to vasodilation, hypotension, and myocardial depression. It directly depresses cardiac contractility and reduces systemic vascular resistance, making cardiovascular collapse more likely, especially in hypovolemic or cardiac-compromised patients. Histamine-mediated effects can also cause bronchospasm and flushing.

Why others are incorrect:

- Option A: Propofol causes hypotension via vasodilation but has minimal histamine release.
- Option C: Ketamine is sympathomimetic, typically increasing heart rate and blood pressure.
- Option D: Etomidate is hemodynamically stable with negligible histamine release.

QUESTION

A patient undergoing surgery develops malignant hyperthermia. Genetic testing reveals an RYR1 gene mutation. Which type of ion channel is primarily affected?

- A Sodium
- B Chloride
- C Potassium

D Calcium

CORRECT

RIGHT ANSWER

D. Calcium

WHY THIS IS RIGHT

The RYR1 gene encodes the ryanodine receptor, a calcium-release channel on the sarcoplasmic reticulum. Mutations cause uncontrolled calcium efflux, triggering the hypermetabolic crisis of malignant hyperthermia. Thus, the affected ion channel is calcium.

QUESTION

Which of the following is the drug of choice for preoperative antibiotic prophylaxis in a patient undergoing cardiac surgery?

A Penicillin G

B Erythromycin

C Azithromycin

D Cefazolin

CORRECT

RIGHT ANSWER

OK D. Cefazolin

WHY THIS IS RIGHT

Cefazolin is the preferred prophylactic antibiotic for cardiac surgery because it provides broad coverage against common skin flora, particularly *Staphylococcus aureus* and *Streptococci*, and has a favourable safety profile. It is the standard first-line agent unless the patient has a severe β -lactam allergy.

QUESTION

| What is the recommended dose of adrenaline for a child during cardiac arrest?

A 0.01 mg/kg (1ml/kg of 1:10,000 solution)

CORRECT

B 0.1 mg/kg (1ml/kg of 1:1000 solution)

C 0.001 mg/kg (1ml/kg of 1:1,00,000 solution)

D 0.5 mg/kg (1ml/kg of 1:2000 solution)

RIGHT ANSWER

OK

A. 0.01 mg/kg (1ml/kg of 1:10,000 solution)

WHY THIS IS RIGHT

The recommended paediatric cardiac arrest dose of adrenaline is 0.01 mg/kg, which corresponds to 1 mL/kg of 1:10,000 (0.1 mg/mL) solution. This is the standard IV/IO dosing per resuscitation guidelines.

QUESTION

A patient is undergoing implant surgery for his upper limb. On giving general anaesthesia he develops tachycardia, sudden raise in body temperature and rigidity of muscles. What drug is most likely to have caused this?

A Halothane

CORRECT

B Propofol

C Etomidate

D Nitrous oxide

RIGHT ANSWER

OK

A. Halothane

WHY THIS IS RIGHT

Halothane is a potent trigger of malignant hyperthermia, presenting with tachycardia, hyperthermia, and muscle rigidity after induction. Among the options, only halothane is known to precipitate this reaction (along with succinylcholine), making it the most likely causative agent.

QUESTION

Which of these is used for immediate reversal of Vecuronium in a patient for normal kidney function?

A Sugammadex

CORRECT

B Physostigmine

C Rivastigmine

D Succinylcholine

RIGHT ANSWER

OK A. Sugammadex

WHY THIS IS RIGHT

Sugammadex reverses vecuronium by directly encapsulating the drug, producing rapid and complete recovery from neuromuscular blockade. It is the preferred agent for immediate reversal when renal function is normal; acetylcholinesterase inhibitors are slower and ineffective for deep blockade.

QUESTION

Which of these is true regarding this?



- A EMLA means equal mixture of LA
- B It contains lignocaine and ropivacaine
- C Methemoglobinemia is a complication of this cream**
- D 1 gm of 5% cream contains lignocaine 50mg

CORRECT

RIGHT ANSWER

- OK
- C. Methemoglobinemia is a complication of this cream**

WHY THIS IS RIGHT

EMLA cream is a 1:1 eutectic mixture of lidocaine (2.5%) and prilocaine (2.5%). Prilocaine can produce methemoglobinemia, making this the correct statement. The acronym does not stand for “equal mixture,” and the cream does not contain ropivacaine. The dosing statement about 5% lignocaine is also incorrect.

QUESTION

A patient develops hyperthermia, generalized muscle rigidity, and increased end-tidal CO₂ (EtCO₂) shortly after administration of succinylcholine and sevoflurane during anaesthesia. Which of the following is the drug of choice for management of this condition?

A Sodium bicarbonate

B Adrenaline

C Dantrolene

CORRECT

D Naloxone

RIGHT ANSWER

OK

C. Dantrolene

WHY THIS IS RIGHT

This presentation is classic for malignant hyperthermia, triggered by succinylcholine and volatile agents like sevoflurane. The definitive treatment is dantrolene, which inhibits calcium release from the sarcoplasmic reticulum, reversing muscle rigidity, stops the hypermetabolic crisis, and rising EtCO₂.

QUESTION

After administration of a neuromuscular blocker, a patient suddenly develops flushing of the face and becomes hypotensive. Which of the following drugs is most likely responsible?

A Rocuronium

B Vecuronium

C Atracurium

CORRECT

D Cisatracurium

RIGHT ANSWER

OK C. Atracurium

WHY THIS IS RIGHT

Atracurium is known to cause histamine release, leading to flushing, hypotension, and sometimes bronchospasm. Rocuronium, vecuronium, and cisatracurium have minimal histamine-releasing properties, making atracurium the most likely culprit in this presentation.

QUESTION

Which inhaled anaesthetic agent is preferred for paediatric induction of anaesthesia?

A Sevoflurane

CORRECT

B Desflurane

C Isoflurane

D Halothane

RIGHT ANSWER

OK A. Sevoflurane

WHY THIS IS RIGHT

Sevoflurane is preferred for paediatric induction because it has a non-pungent smell, causes minimal airway irritation, and provides rapid induction and smooth recovery. Desflurane and isoflurane are pungent and airway irritants, and halothane is avoided due to cardiac and hepatic risks.

QUESTION

A patient was undergoing surgery under general anaesthesia. For intubation, 90 mg of rocuronium was given, but the anaesthesiologist was unable to intubate the patient. What is the drug given for immediate reversal of the neuromuscular blockade?

A Neostigmine

B Sugammadex

CORRECT

C Glycopyrrolate

D Atropine

RIGHT ANSWER

OK B. Sugammadex

WHY THIS IS RIGHT

Sugammadex provides rapid and complete reversal of rocuronium(non-depolarizing neuromuscular blocker) by encapsulating the drug molecule directly, independent of acetylcholinesterase activity. It is the preferred agent when immediate reversal is required after failed intubation with rocuronium.

QUESTION

| Which of these statements is incorrect about Thiopentone?

- A** It is highly lipid soluble
- B** It achieves maximum concentration in brain after IV infusion
- C** Redistribution to adipose tissue and muscle is seen
- D** The rapid decline in its effect is due to renal excretion

CORRECT

RIGHT ANSWER

OK

D. The rapid decline in its effect is due to renal excretion

WHY THIS IS RIGHT

Thiopentone is highly lipid soluble, causing rapid brain uptake immediately after IV dosing. Its effect terminates due to redistribution from the brain to muscle and adipose tissue-not renal excretion. Renal clearance contributes only to late drug elimination, not the rapid fall in anaesthetic effect. The rapid termination of action is due to redistribution, not elimination. Metabolism happens later in the liver, and renal excretion is not responsible for the immediate recovery.

QUESTION

I IV anesthetic agent that causes adrenocortical suppression is:

- A** Propofol
- B** Etomidate CORRECT
- C** Thiopentone
- D** Ketamine

RIGHT ANSWER

- OK** **B. Etomidate**

WHY THIS IS RIGHT

Etomidate inhibits 11- β -hydroxylase, blocking cortisol and aldosterone synthesis, leading to dose-dependent adrenocortical suppression. Even a single dose can reduce steroid production for 6-12 hours. Because of this, it is avoided in septic or critically ill patients who depend on adequate stress-hormone response.

QUESTION

Which of the following drug is used to reverse muscle relaxation induced by vecuronium?

A Neostigmine

CORRECT

B Atropine

C Physostigmine

D Succinylcholine

RIGHT ANSWER

OK A. Neostigmine

WHY THIS IS RIGHT

Vecuronium is a non-depolarizing neuromuscular blocker, reversed by increasing acetylcholine at the NMJ. Neostigmine, an acetylcholinesterase inhibitor, achieves this and is routinely used with an anticholinergic (glycopyrrolate/atropine) to counter muscarinic effects. Succinylcholine is depolarizing and not used for reversal.

QUESTION

A patient undergoes cardiac surgery with muscle relaxant Vecuronium. The surgery was completed and which of the following agents is used for the reversal of this drug?

A Baclofen

B Neostigmine

CORRECT

C Atropine

D Dantrolene

RIGHT ANSWER

OK

B. Neostigmine

WHY THIS IS RIGHT

Vecuronium is a non-depolarizing neuromuscular blocker reversed by neostigmine, an acetylcholinesterase inhibitor that increases acetylcholine at the neuromuscular junction. It is commonly paired with an anticholinergic agent to counter muscarinic effects.

Neostigmine is an acetylcholinesterase inhibitor.

It inhibits breakdown of ACh -> ↑ ACh in synaptic cleft -> outcompetes vecuronium -> reversal of paralysis.

QUESTION

Which of the following true regarding benzodiazepines and barbiturates:

1. Both act on GABA-A chloride channel
2. Alcohol causes superadded CNS depression
3. Flumazenil reverses the action of both
4. Thiopentone has short duration of action due to its rapid metabolism

A Both 1 and 2 are correct

CORRECT

B Only 1 correct

C Only 3 correct

D All are correct

RIGHT ANSWER

OK A. Both 1 and 2 are correct

WHY THIS IS RIGHT

Benzodiazepines and barbiturates both act on the GABA-A chloride channel, and alcohol produces additive CNS depression with them.

Flumazenil reverses benzodiazepines only, not barbiturates, it is a competitive antagonist at the benzodiazepine binding site on GABA-A receptors.

Thiopentone's short action is due to redistribution, not rapid metabolism, it moves quickly from brain -> muscle -> fat.

Metabolism is actually slower. Therefore, statements 1 and 2 are correct.

QUESTION

| Which of the following is an advantage of epidural over spinal anesthesia?

- A** Less dose of drug required
- B** Duration can be prolonged using an inlaying catheter CORRECT
- C** Easier technique
- D** Less traumatic needle

RIGHT ANSWER

- OK** **B. Duration can be prolonged using an inlaying catheter**

WHY THIS IS RIGHT

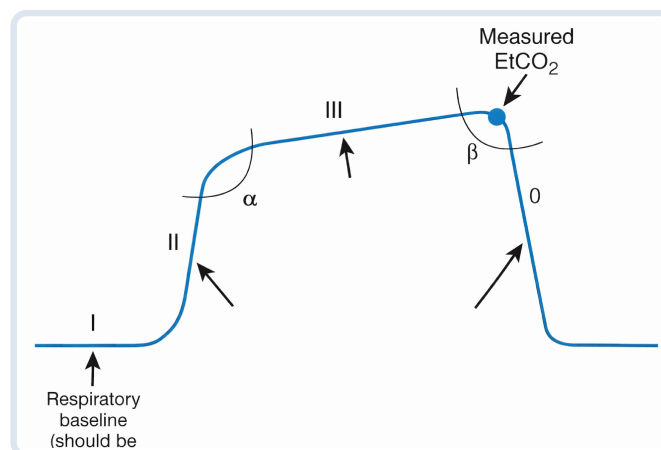
A key advantage of epidural anesthesia over spinal anesthesia is the ability to prolong and titrate the duration of anesthesia and analgesia using an indwelling epidural catheter. This allows continuous or intermittent dosing, making epidural anesthesia ideal for long surgeries, postoperative analgesia, and labor pain control, with adjustable block height and intensity.

Why others are incorrect:

- Option A- Less dose required: Spinal anesthesia requires a smaller drug dose due to direct CSF administration.
- Option C- Easier technique: Spinal anesthesia is technically simpler and faster to perform.
- Option D- Less traumatic needle: Spinal needles are finer and less traumatic than epidural needles.

QUESTION

What does phase II represent in the below image?



- A Inspiration
- B Expiration of dead space air
- C Expiration of mixed air
- D Expiration of alveolar air

CORRECT

RIGHT ANSWER

- OK
- C. Expiration of mixed air

WHY THIS IS RIGHT

In a capnogram, Phase II represents the transition between dead space gas and alveolar gas, i.e., expiration of mixed air. At the start of exhalation, CO₂-free gas from the anatomical dead space is expelled (Phase I). As exhalation continues, alveolar gas rich in CO₂ mixes with dead space gas, producing a rapid upstroke-this is Phase II. It reflects increasing CO₂ concentration as alveolar contribution rises.

Why others are incorrect:

- Option A- Inspiration: Represented by Phase 0 (downstroke to baseline).
- Option B- Expiration of dead space air: This is Phase I, with near-zero CO₂.
- Option D- Expiration of alveolar air: This corresponds to Phase III (alveolar plateau), not Phase II.

QUESTION

A 24-year-old young truck driver has developed a fissure in ano. What would be the ideal anesthesia for this case?

A Caudal anesthesia

B Epidural anesthesia

C Saddle anesthesia

CORRECT

D Spinal anesthesia

RIGHT ANSWER

OK C. Saddle anesthesia

WHY THIS IS RIGHT

For fissure in ano, surgery is confined to the perineal and anal region (S2-S5 dermatomes). Saddle anesthesia, a low-dose spinal block targeting sacral nerve roots, provides dense sensory analgesia to the perineum with minimal motor block and limited sympathetic blockade. This allows rapid recovery, early ambulation, and is ideal for short anorectal procedures in young patients.

Why others are incorrect:

- Caudal anesthesia: More commonly used in pediatrics; less predictable in adults.
- Epidural anesthesia: Excessive for a minor perineal procedure.
- Spinal anesthesia: Produces higher block and more hypotension than required.

QUESTION

A 26-year-old pregnant woman receives epidural anesthesia. Immediately following the injection of lidocaine with epinephrine through the epidural catheter, the patient complains of perioral numbness and becomes very apprehensive. Her heart rate is 110/min and her BP is 90/60 mmHg. What is this most likely due to?

A Accidental subdural injection

B Accidental subarachnoid injection

C **Accidental intravascular injection**

CORRECT

D Allergic manifestation to lignocaine

RIGHT ANSWER

OK

C. Accidental intravascular injection

WHY THIS IS RIGHT

Perioral numbness and apprehension occurring immediately after epidural injection of lidocaine with epinephrine strongly suggest intravascular injection. Early CNS symptoms (perioral numbness, anxiety) reflect local anesthetic systemic toxicity (LAST), while tachycardia indicates intravascular epinephrine. Hypotension may follow due to systemic vasodilation or evolving toxicity. This is why an epinephrine-containing test dose is used to unmask intravascular placement promptly.

Why others are incorrect:

- Option A- Subdural injection: Causes delayed, patchy, high sensory block-not immediate CNS signs.
- Option B- Subarachnoid injection: Produces rapid dense spinal block with severe hypotension/bradycardia.
- Option D- Allergy to lignocaine: Rare; presents with rash, bronchospasm, or anaphylaxis, not perioral numbness.

QUESTION

| Post-dural puncture headache depends on all except:

- A** Age
- B** Timing of ambulation CORRECT
- C** Pregnancy
- D** Type of needle

RIGHT ANSWER

- OK** **B. Timing of ambulation**

WHY THIS IS RIGHT

Post-dural puncture headache (PDPH) is primarily related to CSF leakage through the dural hole, leading to intracranial hypotension. Its incidence is strongly influenced by patient factors and technical factors, but early or delayed ambulation does not affect the risk of PDPH. Studies have shown that prolonged bed rest after dural puncture does not reduce headache incidence, and early mobilization is safe.

Why others are incorrect:

- Option A: Younger age increases PDPH risk due to higher dural elasticity.
- Option C: Pregnancy increases risk because of hormonal and anatomical factors.
- Option D: Needle type (large gauge, cutting needles) significantly increases PDPH risk.

QUESTION

Which of the following local anesthetic agents is commonly used for epidural analgesia during labor?

A Lidocaine

B Bupivacaine

CORRECT

C Procaine

D Mepivacaine

RIGHT ANSWER

OK B. Bupivacaine

WHY THIS IS RIGHT

For labor epidurals we use long-acting amide LAs with good sensory block and minimal motor block, to allow pushing.

Common choices:

- Bupivacaine (most common)
- Ropivacaine (less motor block)
- Often combined with opioids (e.g., fentanyl or sufentanil) for synergy and dose reduction.

QUESTION

| For labor epidural analgesia, the ideal agent should demonstrate:

A Dense motor block with minimal sensory block

B Dense sensory block with minimal motor block

CORRECT

C Pure motor block without sensory block

D Pure sympathetic block without sensory block

RIGHT ANSWER

OK **B. Dense sensory block with minimal motor block**

WHY THIS IS RIGHT

For labor epidural analgesia, the goal is to provide effective pain relief from uterine contractions while preserving motor function so the mother can actively participate in labor and pushing. Hence, an ideal epidural produces a dense sensory block (T10-S5) with minimal motor blockade, typically achieved using dilute local anesthetic solutions (e.g., low-dose bupivacaine or ropivacaine with opioids). This improves maternal satisfaction and reduces instrumental delivery rates.

Why others are incorrect:

- Option A: Dense motor block interferes with ambulation and effective pushing.
- Option C: Pure motor block has no analgesic benefit.
- Option D: Isolated sympathetic block does not provide adequate labor analgesia.

QUESTION

ETCO₂ waveform shows elevated baseline with a progressively rising plateau. Which cause is most likely?

A Exhausted CO₂ absorber

CORRECT

B Excessive minute ventilation

C Esophageal intubation

D Bronchospasm

RIGHT ANSWER

A. Exhausted CO₂ absorber

WHY THIS IS RIGHT

Key sign: baseline fails to return to zero -> CO₂ rebreathing.

An elevated baseline with a progressively rising plateau on the ETCO₂ waveform indicates rebreathing of CO₂, most commonly due to an exhausted CO₂ absorber in the anesthesia circuit. When soda lime is depleted, exhaled CO₂ is not adequately removed, causing inspired CO₂ to rise, reflected as an increased baseline and rising alveolar plateau. This is a classic capnography sign and requires immediate absorber replacement.

Why others are incorrect:

- Option B: Excessive minute ventilation lowers ETCO₂, not raises baseline.
- Option C: Esophageal intubation shows absent or rapidly declining ETCO₂.
- Option D: Bronchospasm causes a “shark-fin” waveform, not baseline elevation.

QUESTION

While performing an interscalene block for shoulder surgery, the patient develops hoarseness of voice and difficulty speaking about 30 minutes after the block. Which of the following is the most likely cause?

A Local anesthetic toxicity

B Horner syndrome

C Recurrent laryngeal nerve block

CORRECT

D Phrenic nerve block

RIGHT ANSWER

OK C. Recurrent laryngeal nerve block

WHY THIS IS RIGHT

Most common nerve to get blocked is phrenic nerve

Hoarseness of voice and difficulty speaking after an interscalene block are classically due to ipsilateral recurrent laryngeal nerve (RLN) blockade. Local anesthetic spread to the vagus nerve or RLN causes vocal cord paresis, leading to hoarseness, weak voice, and dysphonia. This is a known, usually transient complication of interscalene brachial plexus blocks.

Why others are incorrect:

- Option A: Local anesthetic toxicity presents with CNS or cardiac symptoms, not isolated hoarseness.
- Option B: Horner syndrome causes ptosis, miosis, and anhidrosis, not voice changes.
- Option D: Phrenic nerve block causes diaphragmatic paralysis and dyspnea, not hoarseness.

QUESTION

The waveform marked in the image represents which of the following physiological parameters?



A Arterial oxygen saturation

B End-tidal carbon dioxide

CORRECT

C Functional residual capacity

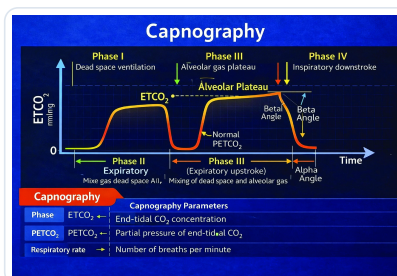
D Tidal volume

RIGHT ANSWER

OK B. End-tidal carbon dioxide

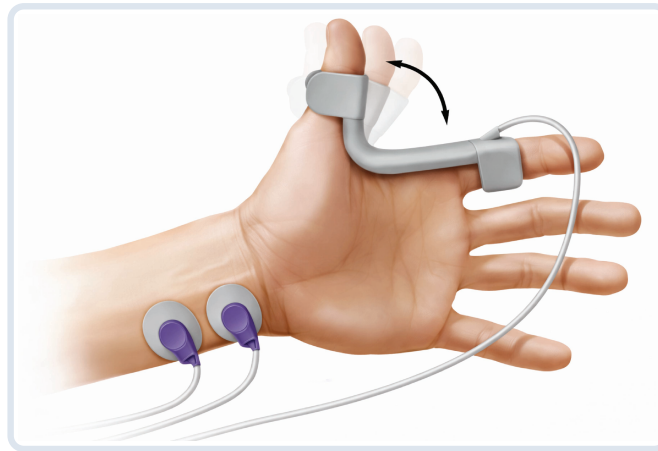
WHY THIS IS RIGHT

The square-like waveform shown is a capnography trace, which measures end-tidal CO_2 during expiration. It reflects CO_2 elimination, with normal EtCO_2 values around 35-45 mmHg.



QUESTION

During general anaesthesia, which nerve is commonly monitored using a nerve stimulator to assess neuromuscular blockade?



A Radial nerve

B Ulnar nerve

CORRECT

C Median nerve

D Tibial nerve

RIGHT ANSWER

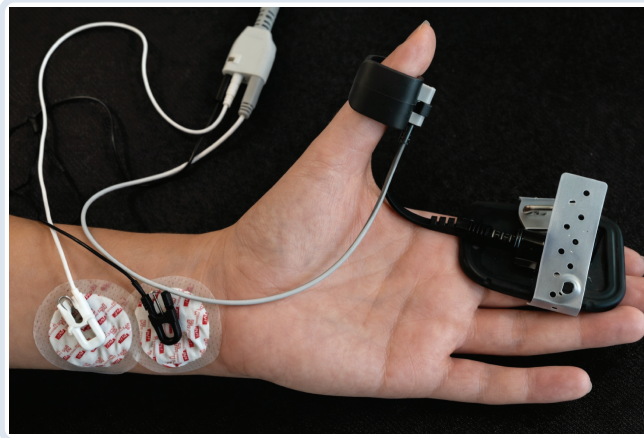
OK B. Ulnar nerve

WHY THIS IS RIGHT

The ulnar nerve is routinely used for neuromuscular blockade monitoring because the adductor pollicis muscle provides reliable, easily observed responses to train-of-four stimulation and correlates well with recovery from paralysis.

QUESTION

The image given below shows neuromuscular monitoring of the patient after anaesthesia. What is the most commonly used nerve for monitoring?



A Ulnar nerve

CORRECT

B Median nerve

C Radial nerve

D Metacarpal nerve

RIGHT ANSWER

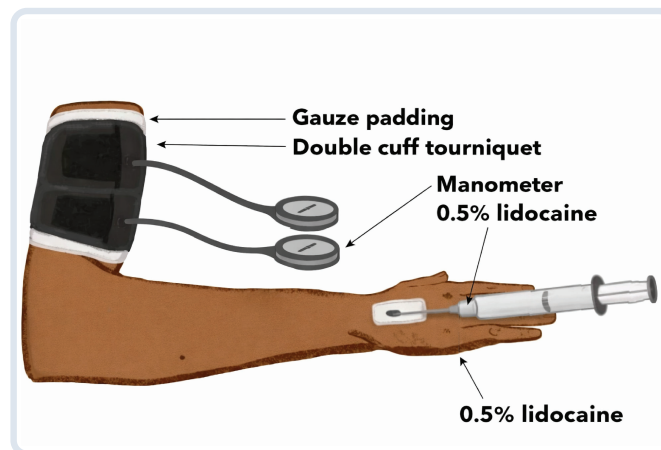
OK A. Ulnar nerve

WHY THIS IS RIGHT

The ulnar nerve is the most commonly used nerve for neuromuscular monitoring, typically assessed at the adductor pollicis muscle. It provides reliable evaluation of train-of-four (TOF) responses and correlates well with recovery from neuromuscular blockade.

QUESTION

Identify the image:



A Radial nerve block

B Axillary block

C Bier's block

CORRECT

D Wrist block

RIGHT ANSWER

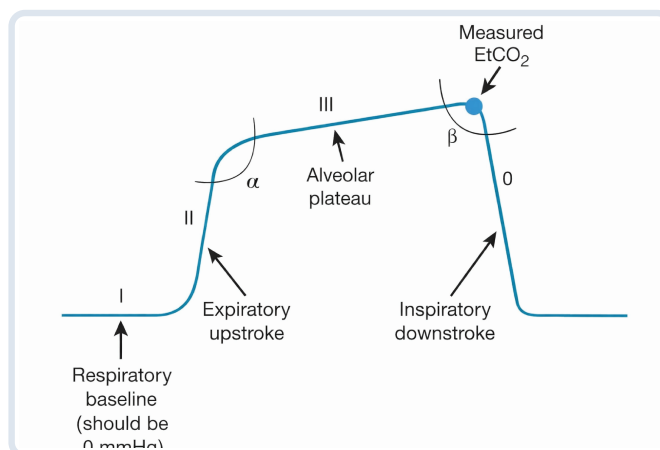
OK C. Bier's block

WHY THIS IS RIGHT

Bier's block (IVRA) involves placing a tourniquet on the limb and injecting local anaesthetic into a distal vein after exsanguination. The setup in the image—tourniquet with intravenous access on the limb—matches the classic appearance of Bier's block.

QUESTION

What does phase III represent in the below image?



- A Inspiration
- B Expiration of dead space air
- C Expiration of mixed air
- D Alveolar plateau

CORRECT

RIGHT ANSWER

OK

D. Alveolar plateau

WHY THIS IS RIGHT

Phase III of the capnography waveform represents the alveolar plateau, where exhaled gas is predominantly alveolar. CO_2 concentration rises gradually until the end of this phase, giving the EtCO_2 value. It reflects alveolar ventilation, V/Q matching & quality of ventilation.

QUESTION

A 60 years old male patient was undergoing laparoscopic cholecystectomy. During the surgery, it was observed that there was a sudden decrease in etCO₂ to 8 mm Hg, SpO₂ was 90%, BP dropped to 80/50 mm Hg and peak airway pressure was observed to be 18 mm Hg. Which of the most probable diagnosis?

- A** Pneumothorax
- B** CO₂ embolism
- C** Endobronchial intubation
- D** Bronchospasm

CORRECT

RIGHT ANSWER

- OK** **B. CO₂ embolism**

WHY THIS IS RIGHT

A sudden sharp fall in EtCO₂, hypotension, mild desaturation, and normal airway pressures during laparoscopy strongly point to CO₂ embolism. Pneumothorax, bronchospasm, and endobronchial intubation all increase airway pressures, which is not seen here. CO₂ embolism is a known complication of pneumoperitoneum.

QUESTION

A person has suffered from chest trauma resulting in fracture of 2-6th ribs. He is being given pain relief by IV analgesic agents. Which of these blocks will be helpful in pain relief?

A Cervical plexus

B Supraclavicular block

C Thoracic epidural

CORRECT

D Lumbar epidural

RIGHT ANSWER

OK C. Thoracic epidural

WHY THIS IS RIGHT

Rib fractures from T2-T6 produce severe chest wall pain best relieved by thoracic epidural, which provides segmental analgesia to the corresponding dermatomes. Cervical and supraclavicular blocks do not cover thoracic levels, and lumbar epidural is too low to provide effective analgesia for upper thoracic ribs.

QUESTION

Which of the statements is true about lumbar puncture?

1. LP is urgently indicated if CT scan is negative in suspected SAH
2. Post dural puncture head ache is common in females and older adults
3. Meningitis after LP is an unusual side effect
4. LP is safely done in thrombocytopenia more than 10000

A 1, 2, 3 and 4

B 1, 2, 3

C 3,4

D 1,3

CORRECT

RIGHT ANSWER

OK D. 1,3

WHY THIS IS RIGHT

LP is indicated after a negative CT in suspected subarachnoid haemorrhage to detect xanthochromia (true). Meningitis is a rare complication (true). PDPH is more common in young females, not older adults, and LP is unsafe at platelet counts around 10,000 (requires $\geq 50,000$). Hence only statements 1 and 3 are correct.

QUESTION

A 60-year-old male patient has grade III ASA. Which of the following post bronchodilator PFT findings requires further evaluation of the lung function of the patient?

- A FEV1 < 0.85 and FEV1/FVC <0.8
- B FEV1 < 0.85 and FEV1/FVC <0.75
- C FEV1 < 0.8 and FEV1/FVC <0.7**
- D FEV1 < 0.8 and FEV1/FVC <0.75

CORRECT

RIGHT ANSWER

- OK
- C. FEV1 < 0.8 and FEV1/FVC <0.7**

WHY THIS IS RIGHT

Post-bronchodilator pulmonary function tests are used to identify persistent (fixed) airflow obstruction that warrants further evaluation and perioperative risk stratification. An FEV₁ < 0.85 and FEV₁/FVC < 0.75 confirms obstructive lung disease, and an FEV₁ < 80% predicted indicates at least moderate functional impairment, which is clinically significant in an ASA III patient. This combination suggests reduced pulmonary reserve and increased risk of postoperative pulmonary complications, thus requiring further assessment and optimization.

Why others are incorrect:

- FEV₁ < 0.85 cut-off is too high and may represent mild or normal variation.
- FEV₁/FVC < 0.75-0.8 does not meet the standard diagnostic threshold for obstruction.

QUESTION

A 60-year-old obese male is scheduled for elective surgery under general anesthesia. He has a history of obstructive sleep apnea, hypertension, and a BMI of 35. Preoperative airway assessment is performed to determine if the patient has a difficult airway, as this could complicate the intubation process during the surgery. Based on the clinical tests, which of the following findings would classify this patient as having a "difficult airway"?

A Mallampati score III

CORRECT

B Thyromental distance 7 cm

C Sterno-mental distance 13 cm

D Upper lip bite test: Ability to protrude mandible

RIGHT ANSWER

OK

A. Mallampati score III

WHY THIS IS RIGHT

A Mallampati score III indicates that only the soft palate and base of the uvula are visible, which correlates with reduced oropharyngeal space and a higher likelihood of difficult laryngoscopy and intubation, especially in obese patients with OSA. This is a well-established predictor used in routine airway assessment.

Why others are incorrect:

Option B- Thyromental distance 7 cm: Normal (≥ 6.5 cm); suggests adequate mandibular space.

Option C- Sternomental distance 13 cm: Normal (> 12.5 cm); indicates good neck extension.

Option D- Upper lip bite test (mandible protrusion): A positive test predicts easy, not difficult, intubation.

QUESTION

Which of the following non-invasive investigations provides the most accurate prognostic information with respect to predicting risks of perioperative cardiac complications?

- A** Exercise ECG testing
- B** Dobutamine stress echocardiography
- C** Myocardial perfusion scintigraphy
- D** Coronary angiography

CORRECT

RIGHT ANSWER

- OK** **B. Dobutamine stress echocardiography**

WHY THIS IS RIGHT

Dobutamine stress echocardiography (DSE) is the most accurate non-invasive test for predicting perioperative cardiac complications. It detects stress-induced wall-motion abnormalities, which directly reflect myocardial ischemia under physiologic stress similar to surgery. A negative DSE has a high negative predictive value, making it especially valuable for perioperative risk stratification in patients unable to exercise.

Why others are incorrect:

- Option A- Exercise ECG: Limited sensitivity and often not feasible perioperatively.
- Option C- Myocardial perfusion scintigraphy: Useful but less specific for predicting perioperative events.
- Option D- Coronary angiography: Invasive and anatomical; does not reliably predict perioperative risk.

QUESTION

How long should elective surgery be deferred for a patient who was admitted in the ICU for severe respiratory infection?

A 6 weeks

B 8-10 weeks

C 12 weeks

CORRECT

D 14 weeks

RIGHT ANSWER

OK C. 12 weeks

WHY THIS IS RIGHT

After a severe respiratory infection requiring ICU admission, elective surgery should be deferred for about 12 weeks. Severe infections cause prolonged impairment of lung mechanics, gas exchange, respiratory muscle strength, and mucociliary clearance. In addition, airway hyperreactivity and residual inflammation may persist for several weeks, significantly increasing the risk of postoperative pulmonary complications such as pneumonia, hypoxemia, reintubation, and prolonged ventilation. Evidence shows that pulmonary risk normalizes closer to 3 months after severe lower respiratory tract infections.

Why others are incorrect:

- Option A- 6 weeks: Adequate only for mild infections.
- Option B- 8-10 weeks: May still carry increased pulmonary risk after ICU illness.
- Option D- 14 weeks: Longer than necessary without added benefit.

QUESTION

Children's Hospital of Eastern Ontario Pain Scale (CHEOPS) for rating postoperative pain includes all of the following, except:

- A Cry
- B Legs
- C Torso position

D Oxygen saturation

CORRECT

RIGHT ANSWER

D. Oxygen saturation

WHY THIS IS RIGHT

The Children's Hospital of Eastern Ontario Pain Scale (CHEOPS) is a behavioral pain assessment tool used to evaluate postoperative pain in young children who cannot reliably self-report. It assesses observable behaviors including cry, facial expression, verbal response, torso position, touch, and legs. These parameters reflect discomfort and pain-related behavior rather than physiological variables.

Why others are incorrect:

- Option A- Cry: Indicates distress and is a core CHEOPS component.
- Option B- Legs: Position and movement reflect pain-related agitation.
- Option C- Torso position: Assesses guarding or rigidity due to pain.

QUESTION

I Preoperative fasting recommendation is

- A** 4 hours for solids in adults
- B** 2 hours for liquids in adults **CORRECT**
- C** 2 hours for breast milk in infants
- D** 4 hours for solids in infants

RIGHT ANSWER

- OK** **B. 2 hours for liquids in adults**

WHY THIS IS RIGHT

Current preoperative fasting (ASA) guidelines recommend that clear liquids (water, clear juice, black tea/coffee) may be taken up to 2 hours before anesthesia in adults. This reduces dehydration, insulin resistance, and patient discomfort without increasing aspiration risk.

Why others are incorrect:

- Option A- 4 hours for solids in adults: Solid food requires at least 6 hours, not 4.
- Option C- 2 hours for breast milk in infants: Breast milk requires 4 hours of fasting.
- Option D- 4 hours for solids in infants: Infant formula/solids also require 6 hours, similar to adults.

QUESTION

A 58-year-old male has a drug-eluting stent placed 10 months back and currently on dual antiplatelet therapy. When should this anti-platelets be stopped before the current elective surgery?

A Stopped 2 weeks before surgery

B Stopped 1 week before surgery

C Stopped 1 day before surgery

D Need not to be stopped

CORRECT

RIGHT ANSWER

OK

D. Need not to be stopped

WHY THIS IS RIGHT

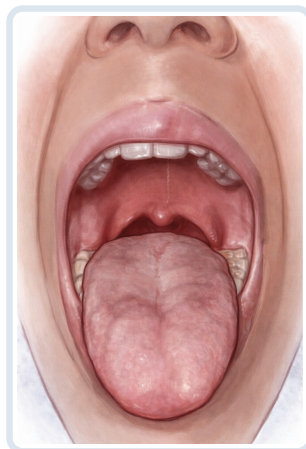
In a patient with a drug-eluting stent placed 10 months ago, dual antiplatelet therapy (DAPT) should not be stopped for elective surgery. Current guidelines recommend continuing DAPT for at least 12 months after DES placement, as premature discontinuation significantly increases the risk of acute stent thrombosis, which carries high mortality. Elective surgeries should ideally be postponed until completion of 12 months of DAPT. If surgery is unavoidable, cardiology consultation is mandatory, and continuation of antiplatelets is preferred unless bleeding risk is life-threatening.

Why others are incorrect:

- A & B: Early cessation markedly increases thrombosis risk.
- C: One day is inadequate for platelet recovery and unsafe.

QUESTION

A 60-year-old male with a history of myocardial infarction two months back has been planned for elective cholecystectomy. The following image shows an assessment of his airway. He would be classified as:



A ASA PS 3, Grade 3 Mallampati

B ASA PS 4, Grade 3 Mallampati

CORRECT

C ASA PS 2, Grade 2 Mallampati

D ASA PS 5, Grade 3 Mallampati

RIGHT ANSWER

OK

B. ASA PS 4, Grade 3 Mallampati

WHY THIS IS RIGHT

A patient with a myocardial infarction within the last 3 months is classified as ASA Physical Status IV, as this represents severe systemic disease that is a constant threat to life, even if the patient is currently stable. Elective surgery in this period carries a high risk of reinfarction and mortality.

The airway image shows only the soft palate and base of the uvula visible, consistent with Mallampati Grade 3, indicating a potentially difficult airway.

Why others are incorrect:

- Option A: ASA III applies when MI is >3 months old.
- Option C: ASA II is only mild systemic disease.
- Option D: ASA V is for moribund patients not expected to survive without surgery.

QUESTION

Which among the following medications must be withheld on the day of surgery due to potential complications?

A Digoxin

B Furosemide

CORRECT

C Propylthiouracil

D Prednisolone

RIGHT ANSWER

OK B. Furosemide

WHY THIS IS RIGHT

Furosemide, a loop diuretic, is commonly withheld on the day of surgery due to the risk of intravascular volume depletion, hypokalemia, and hypotension, which can worsen peri-induction hemodynamic instability and predispose to arrhythmias. Electrolyte disturbances may also increase sensitivity to anesthetic drugs and neuromuscular blockers.

Why others are incorrect:

- Option A- Digoxin: Usually continued to maintain rate control and cardiac function; stopping may precipitate arrhythmias.
- Option B- Propylthiouracil: Must be continued to prevent perioperative thyrotoxicosis.
- Option C- Prednisolone: Should not be stopped abruptly; stress-dose steroids may be required to prevent adrenal crisis.

QUESTION

Which is the preferred anaesthetic technique used in a surgery for a patient with severe aortic stenosis?

A General anesthesia

CORRECT

B Spinal anesthesia

C Epidural anesthesia

D Intercostal nerve block

RIGHT ANSWER

OK **A. General anesthesia**

WHY THIS IS RIGHT

In severe aortic stenosis, maintaining stable hemodynamics is critical. General anesthesia allows tight control over heart rate, preload, afterload, and contractility. Sudden decreases in systemic vascular resistance or preload can cause profound hypotension and myocardial ischemia, which are life-threatening in these patients. With GA, invasive monitoring and vasoactive support can be used to maintain coronary perfusion pressure and sinus rhythm.

Why others are incorrect:

- Option B: Spinal anesthesia causes abrupt sympathetic blockade and severe hypotension.
- Option C: Epidural anesthesia also risks vasodilation and reduced preload.
- Option D: Intercostal nerve block provides inadequate anesthesia for major surgery.

QUESTION

| Major cause of perioperative hypothermia in neonates:

- A** Reduced shivering threshold
- B** High surface area to body mass ratio **CORRECT**
- C** Impaired sweating
- D** Excess evaporation due to renal losses

RIGHT ANSWER

- OK** **B. High surface area to body mass ratio**

WHY THIS IS RIGHT

Neonates are highly prone to perioperative hypothermia primarily due to a large surface area relative to body mass, which leads to rapid heat loss via radiation, convection, and conduction in the cold operating room environment. Additionally, thin skin, minimal subcutaneous fat, and immature thermoregulatory mechanisms worsen heat loss. Hence, meticulous thermal protection is essential during anesthesia and surgery.

Why others are incorrect:

- Option A: Neonates have limited shivering, but this is not the major cause of heat loss.
- Option C: Impaired sweating affects heat dissipation, not hypothermia risk.
- Option D: Renal losses do not significantly contribute to perioperative hypothermia.

QUESTION

A patient is scheduled for laparoscopic surgery under general anaesthesia in a day care setting. Which of the following factors makes him unsuitable for day care surgery?

- A** Home is 45 minutes drive away from the hospital
- B** The surgical procedure is expected to last slightly over 1 hour
- C** No attendant is available at home to care for the patient postoperatively
- D** ASA grade 3

CORRECT

RIGHT ANSWER

- OK** **C. No attendant is available at home to care for the patient postoperatively**

WHY THIS IS RIGHT

A mandatory requirement for day-care surgery is the presence of a responsible adult caregiver at home after discharge. Lack of an attendant is an absolute contraindication, making option C the correct factor that makes this patient unsuitable for ambulatory surgery.

QUESTION

| Which of the following criteria corresponding to ASA grade III?

- A** Mild illness
- B** Moderate illness
- C** Severe illness which is constant threat to life
- D** **Severe illness**

CORRECT

RIGHT ANSWER

- OK** **D. Severe illness**

WHY THIS IS RIGHT

ASA III corresponds to severe systemic disease that limits activity but is not a constant threat to life. The disease is significant and limits activity, but not actively life threatening at rest. It is more serious than mild or moderate illness but not as critical as ASA IV, where disease poses a continual threat.

QUESTION

| Which of the following is not weaning mode of ventilation:

CORRECT

A CMV

B SIMV

C PSV

D CPAP

RIGHT ANSWER

OK

A. CMV

WHY THIS IS RIGHT

Continuous Mandatory Ventilation (CMV) is not a weaning mode because the ventilator delivers a fixed number of mandatory breaths regardless of patient effort, providing minimal opportunity for spontaneous breathing or respiratory muscle training. This can lead to diaphragmatic disuse and delays in liberation from the ventilator.

Why others are incorrect (they ARE weaning modes):

- SIMV: Allows spontaneous breaths between mandatory ones; mandatory rate can be gradually reduced.
- PSV: Supports spontaneous breaths with pressure assistance, promoting patient-driven ventilation.
- CPAP: Maintains airway patency while the patient breathes spontaneously, often used before extubation.

QUESTION

A 56-year-old man with acute respiratory distress syndrome (ARDS) is being managed in the ICU. The intensivist decides to implement Positive End-Expiratory Pressure (PEEP) in his ventilatory support. Which of the following statements about PEEP is incorrect?

A Useful in situations where PO_2 is low

B Decreases carbon dioxide

C Causes impairment in renal function

D Decreases intracranial tension (ICT)

CORRECT

RIGHT ANSWER

OK D. Decreases intracranial tension (ICT)

WHY THIS IS RIGHT

PEEP is widely used in ARDS to improve oxygenation by preventing alveolar collapse and increasing functional residual capacity, hence it is useful when PaO_2 is low. By improving alveolar recruitment, PEEP can also enhance CO_2 elimination in some patients. However, PEEP increases intrathoracic pressure, which reduces venous return and may impair renal perfusion and function. Importantly, raised intrathoracic pressure impedes cerebral venous drainage, leading to a rise in intracranial pressure, not a decrease.

Why others are correct:

- Useful in hypoxemia - true
- May help CO_2 clearance - true
- Can impair renal function - true

QUESTION

In a patient on mechanical ventilation and placed in prone position which of the following is true?

CORRECT

- A** Prevents atelectasis of lung and alveolar collapse
- B** Reduces CO₂ in alveoli
- C** Decreases inspiratory pressure
- D** Increases venous return and thus maintains cardiac output

RIGHT ANSWER

- OK** **A. Prevents atelectasis of lung and alveolar collapse**

WHY THIS IS RIGHT

In mechanically ventilated patients, especially with ARDS, the prone position improves ventilation-perfusion matching by recruiting dorsal lung regions that are prone to collapse in the supine position. This prevents atelectasis and alveolar collapse, improves oxygenation, and reduces ventilator-induced lung injury by promoting more homogeneous lung inflation.

Why others are incorrect:

- Reduces CO₂ in alveoli: CO₂ clearance may improve, but this is not the primary or consistent effect.
- Decreases inspiratory pressure: Prone positioning does not reliably lower airway pressures.
- Increases venous return: Prone positioning may actually reduce venous return due to increased intra-abdominal pressure.

QUESTION

You are planning to wean a patient off mechanical ventilation. Which of the following is not a criterion to do so?

- A Tidal volume more than 5 ml/kg
- B Vital capacity more than 5 ml/kg
- C Minute ventilation of less than 10L/min
- D Rapid Shallow Breathing Index (RSBI) < 105

CORRECT

RIGHT ANSWER

- OK B. Vital capacity more than 5 ml/kg

WHY THIS IS RIGHT

A vital capacity >5 mL/kg is not an accepted criterion for weaning from mechanical ventilation because it is too low to ensure adequate respiratory reserve. Standard weaning parameters require a vital capacity ≥ 10 -15 mL/kg, indicating sufficient inspiratory and expiratory muscle strength to sustain spontaneous breathing after extubation.

Why others are incorrect:

- Option A: Tidal volume >5 mL/kg suggests adequate spontaneous breath size.
- Option C: Minute ventilation <10 L/min reflects efficient ventilation without excessive work.
- Option D: RSBI <105 is a strong predictor of successful weaning and extubation.

QUESTION

A 46-year-old patient is being mechanically ventilated for acute respiratory distress syndrome. The ventilator settings are: tidal volume 480ml, frequency 25 breaths per minute, PEEP of 5cm of H₂O, and FiO₂ of 90%. His weight is 60 kg. Arterial blood gases are normal. Which of the following can be done?

A Reduce FiO₂

B Decrease tidal volume

CORRECT

C Reduce respiratory rate

D Reduce PEEP

RIGHT ANSWER

OK

B. Decrease tidal volume

WHY THIS IS RIGHT

In ARDS, the cornerstone of management is lung-protective ventilation to prevent ventilator-induced lung injury. The recommended tidal volume is ~ 6 mL/kg of predicted body weight. For a 60-kg patient, this equals ~ 360 mL, but the patient is receiving 480 mL (≈ 8 mL/kg), which increases the risk of volutrauma and barotrauma despite normal ABGs. Hence, tidal volume should be reduced first.

Why others are incorrect:

- Option A: FiO₂ can be reduced later, but lung protection takes priority.
- Option C: Lowering RR risks hypercapnia.
- Option D: PEEP is already minimal; reducing it may worsen oxygenation.

QUESTION

A 58-year-old male with community-acquired pneumonia is intubated. Latest ABG on current ventilator settings:

Mode: Volume assist-control

VT: 6 mL/kg PBW

RR: 14/min

FiO₂: 0.50

PEEP: 8 cmH₂O

ABG:

pH: 7.21

PaCO₂: 60 mmHg

PaO₂: 82 mmHg

HCO₃⁻: 24 mEq/L

Breath stacking or dynamic hyperinflation is not observed. Which ventilator adjustment is most appropriate?

- A Increase tidal volume to 8-10 mL/kg
- B Increase respiratory rate to 22-26/min**
- C Decrease FiO₂ to 0.30 and increase PEEP to 12 cmH₂O
- D Add bicarbonate infusion to correct the acidosis

CORRECT

RIGHT ANSWER

- B. Increase respiratory rate to 22-26/min**

WHY THIS IS RIGHT

ABG shows primary respiratory acidosis:

- Low pH (7.21)
- High PaCO₂ (60)
- Normal HCO₃⁻

So you need to increase minute ventilation:

- Minute Ventilation = VT × RR

Since VT is already at ARDS-protective limit (6 mL/kg), you increase RR.

QUESTION

A 62-year-old male with septic shock and ARDS ($\text{PaO}_2/\text{FiO}_2 = 120$) is intubated and placed on mechanical ventilation. His current ventilator settings are:

Mode: Volume assist-control

VT: 8 mL/kg predicted body weight

FiO_2 : 0.80

PEEP: 5 cmH₂O

RR: 22/min

Plateau pressure: 32 cmH₂O

Despite these settings, his SpO_2 remains 88%. According to lung-protective ventilation strategies for ARDS, which of the following is the most appropriate adjustment?

- A Increase VT to 10 mL/kg to improve oxygenation
- B Increase RR to 30/min without changing VT
- C Increase PEEP to 12-15 cmH₂O and reduce VT to 6 mL/kg
- D Switch to pressure support ventilation to reduce plateau pressures

CORRECT

RIGHT ANSWER

- OK
- C. Increase PEEP to 12-15 cmH₂O and reduce VT to 6 mL/kg

WHY THIS IS RIGHT

Why C is correct

ARDS ventilation goals:

- Low tidal volume: 6 mL/kg
- Plateau pressure < 30 cmH₂O
- Higher PEEP for recruitment
- Accept permissive hypercapnia

Current plateau = 32 -> high -> VT must go ↓

Current PEEP = 5 -> too low for severe ARDS

Other options:

- Option A: Increase VT -> increases barotrauma + worsens plateau pressures
- Option B: Increase RR only -> oxygenation issue is not fixed + worsens hyperinflation
- Option D: Switch to PSV -> not used in acute ARDS (patient not ready to trigger ventilator)

QUESTION

A patient presents with acute exacerbation of COPD and requires non-invasive ventilation. Which mode of ventilation is typically preferred?

- A CPAP
- B PSV (Pressure Support Ventilation)
- C Volume control ventilation
- D Bi-level positive airway pressure (BiPAP)**

CORRECT

RIGHT ANSWER

- D. Bi-level positive airway pressure (BiPAP)**

WHY THIS IS RIGHT

In acute exacerbation of COPD, BiPAP is the preferred non-invasive ventilation mode because it provides two pressure levels: higher inspiratory pressure (IPAP) to reduce work of breathing and improve CO₂ clearance, and lower expiratory pressure (EPAP) to prevent airway collapse. This directly addresses hypercapnic respiratory failure, reduces intubation rates, and improves survival.

QUESTION

In a patient on mechanical ventilation and placed in prone position which of the following about PEEP is true?

CORRECT

- A** Prevents atelectasis of lung and alveolar collapse
- B** Reduces CO₂ in alveoli
- C** Decreases inspiratory pressure
- D** Increases venous return and thus maintains cardiac output

RIGHT ANSWER

- OK** **A. Prevents atelectasis of lung and alveolar collapse**

WHY THIS IS RIGHT

PEEP helps keep alveoli open and prevents atelectasis, especially beneficial in prone-positioned ventilated patients. It improves oxygenation by maintaining functional residual capacity, while the other options are incorrect: PEEP does not reduce CO₂, does not lower inspiratory pressures, and typically reduces venous return.

QUESTION

| Which of the following is incorrect regarding High-Quality CPR?

- A Chest compressions at 100-120/min
- B Allow adequate chest recoil
- C Chest compression to Rescue breath ratio is 30:2
- D Depth of compression must be 3-4cm**

CORRECT

RIGHT ANSWER

- OK D. Depth of compression must be 3-4cm**

WHY THIS IS RIGHT

High-quality adult CPR requires compression depth of at least 5 cm (about 2 inches) to generate adequate cardiac output. Recommended rate is 100-120/min with complete chest recoil between compressions.

Parameter	Recommended Value
Compression rate	100-120/min
Compression depth	5-6 cm (2-2.4 inches)
Compression : ventilation	30 : 2
Chest recoil	Must be complete
Interruptions	<10 seconds

During chest recoil: Negative intrathoracic pressure develops

This allows:

- Venous blood to return to the heart
- Cardiac chambers to refill

If recoil is incomplete:

- Cardiac output decreases
- Coronary perfusion falls

The standard compression-to-ventilation ratio is 30:2 for single rescuer CPR.

Thus, a depth of 3-4 cm is inadequate, making option D incorrect.

QUESTION

| What is the recommended dose of adrenaline for a child during cardiac arrest?

CORRECT

A 0.01 mg/kg (1ml/kg of 1:10,000 solution)

B 0.1 mg/kg (1ml/kg of 1:1000 solution)

C 0.001 mg/kg (1ml/kg of 1:1,00,000 solution)

D 0.5 mg/kg (1ml/kg of 1:2000 solution)

RIGHT ANSWER

OK

A. 0.01 mg/kg (1ml/kg of 1:10,000 solution)

WHY THIS IS RIGHT

During pediatric cardiac arrest, the recommended dose of adrenaline (epinephrine) is 0.01 mg/kg IV/IO, given as a 1:10,000 solution. Adrenaline improves coronary and cerebral perfusion pressure through α -adrenergic vasoconstriction and increases the likelihood of return of spontaneous circulation. This dose is repeated every 3-5 minutes during CPR as per PALS guidelines.

(*Note: the correct volume is 0.1 mL/kg of 1:10,000; exams sometimes misprint this.*)

Why others are incorrect:

- 0.1 mg/kg (1:1000): Ten-fold overdose -> severe arrhythmias.
- 0.001 mg/kg (1:100,000): Subtherapeutic and ineffective.
- 0.5 mg/kg: Grossly excessive and dangerous.

QUESTION

Which of these is the definition of effective CPR?

1. Respiratory rate: 20 - 24 breaths per minute.
2. Chest compressions: 100-120/min.
3. Allow complete chest recoil.
4. 2-2.4 inches depression.

A 1, 2, 3 and 4

B 1, 2 and 4

C 2, 3 and 4

CORRECT

D 1 and 2 only

RIGHT ANSWER

OK C. 2, 3 and 4

WHY THIS IS RIGHT

Effective CPR is defined by delivering high-quality chest compressions that optimize perfusion. This includes a compression rate of 100-120/min, allowing complete chest recoil to permit venous return, and achieving an adequate depth of 2-2.4 inches (5-6 cm) in adults. These factors together determine coronary and cerebral perfusion during cardiac arrest.

Why the others are incorrect:

- 1: A respiratory rate of 20-24/min is not recommended during CPR; excessive ventilation reduces venous return and worsens outcomes.

Options including 1 are therefore incorrect.

QUESTION

A 27-year-old woman was brought to the casualty in an unconscious state after having suddenly collapsed. As there was no pulse, cardiopulmonary resuscitation was started and the defibrillator showed the following. What is the next step?



- A** Defibrillation
- B** Synchronized cardioversion
- C** 1 mg epinephrine IV
- D** 0.5 mg atropine IV

CORRECT

RIGHT ANSWER

- OK** C. 1 mg epinephrine IV

WHY THIS IS RIGHT

In a patient who is unconscious, pulseless, and whose defibrillator rhythm (as implied) is asystole or pulseless electrical activity (PEA), the rhythm is non-shockable. In such cases, the next immediate step is high-quality CPR with early administration of epinephrine (1 mg IV). Epinephrine increases coronary and cerebral perfusion pressure via α -adrenergic vasoconstriction and improves the chances of return of spontaneous circulation.

Why others are incorrect:

- Defibrillation: Only for shockable rhythms (VF/pulseless VT).
- Synchronized cardioversion: Requires a pulse.
- Atropine: No role in cardiac arrest; used for symptomatic bradycardia only.

QUESTION

| All of the following are correct for Pediatric CPR except:

- A** Administer 2 breath every 2-3 seconds
- B** Use a cuffed endotracheal tube for intubating this child
- C** Apply cricoid pressure during endotracheal intubation CORRECT
- D** Administer the initial dose of epinephrine within 5 minutes from the start of chest compressions

RIGHT ANSWER

- OK** **C. Apply cricoid pressure during endotracheal intubation**

WHY THIS IS RIGHT

Routine cricoid pressure is not recommended during pediatric CPR or intubation. It can worsen the laryngoscopic view, delay intubation, and increase the risk of airway obstruction or hypoventilation. Current pediatric resuscitation guidelines advise against its routine use, especially in emergencies.

Why others are incorrect (they are correct statements):

- 2 breaths every 2-3 seconds is appropriate once an advanced airway is in place.
- Cuffed endotracheal tubes are safe and preferred in children when size and cuff pressure are appropriate.
- Epinephrine within 5 minutes of starting chest compressions improves outcomes in pediatric cardiac arrest.

QUESTION

While walking on the street, you find an unresponsive child. After confirming that the child is not breathing, what is the next best course of action?

- A** Deliver rescue breaths, as most pediatric cardiac arrests are secondary to breathing problems
- B** Begin back blows and chest thrusts
- C** Deliver 30 chest compressions followed by 2 rescue breaths for 2 minutes, then leave the child to call for help CORRECT
- D** Leave the child immediately to search for an AED

RIGHT ANSWER

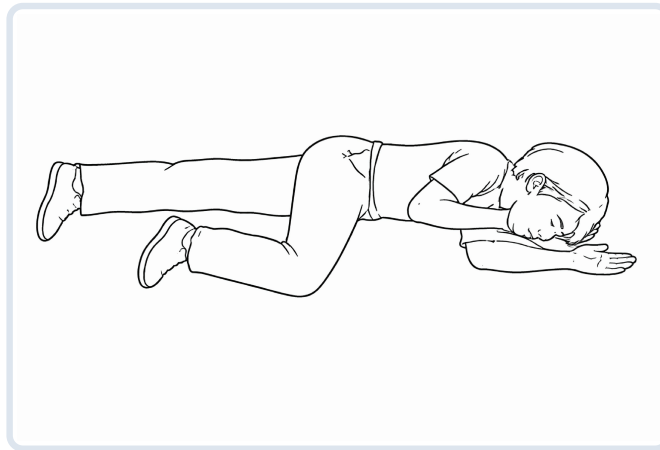
- OK** **C. Deliver 30 chest compressions followed by 2 rescue breaths for 2 minutes, then leave the child to call for help**

WHY THIS IS RIGHT

After confirming unresponsiveness and absence of breathing in a child, the next step is to initiate CPR immediately. In pediatric BLS, if you are alone, you should give 30 chest compressions followed by 2 rescue breaths, continuing CPR for about 2 minutes before leaving the child to call for help and activate EMS. Early CPR maintains cerebral and coronary perfusion and significantly improves outcomes in pediatric cardiac arrest.

QUESTION

| During resuscitation, when is the given position?



- A** Unconsciousness with pulse and breathing absent
- B** Unconsciousness with pulse present and breathing absent
- C** Unconsciousness with pulse and breathing present CORRECT
- D** Unconsciousness with pulse absent and breathing present

RIGHT ANSWER

OK

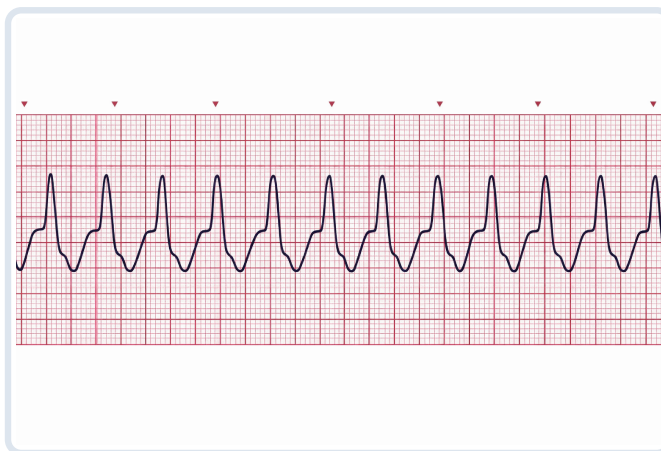
C. Unconsciousness with pulse and breathing present

WHY THIS IS RIGHT

This is the recovery position, used for an unconscious patient who has both pulse and spontaneous breathing. It maintains airway patency and prevents aspiration by allowing secretions to drain.

QUESTION

A 2-year-old child is undergoing CPR. He is pulseless and shows the below ECG. What is the next step?



- A** Give shock with 2 J/kg and check pulse
- B** Give shock with 2 J/kg and continue CPR for 2 mins
- C** Synchronized cardioversion
- D** Continue CPR till pulse is back

CORRECT

RIGHT ANSWER

- OK** B. Give shock with 2 J/kg and continue CPR for 2 mins

WHY THIS IS RIGHT

The ECG shows ventricular tachycardia in a pulseless child. Paediatric cardiac arrest algorithms mandate unsynchronized defibrillation at 2 J/kg, immediately followed by 2 minutes of CPR before the next rhythm check. Synchronized cardioversion is not used in pulseless rhythms.

QUESTION

A 2-year-old child suddenly becomes unresponsive following a peanut ingestion. What is the next immediate step in management?

- A** Start back blows
- B** Intubate immediately with an endotracheal tube
- C** Give abdominal thrusts

D Start chest compressions

CORRECT

RIGHT ANSWER

OK **D. Start chest compressions**

WHY THIS IS RIGHT

A suddenly unresponsive child with suspected FBAO is treated as cardiac arrest. When a child becomes unresponsive, you immediately start the CPR sequence, beginning with chest compressions, not back blows or abdominal thrusts. Airway maneuvers are done only during CPR cycles.

QUESTION

Which of these are the components of high-quality CPR?

- a) Compression rate 100-120/min
- b) Depth of compression in adults is 3-4 cm
- c) Ventilation of 2 breaths for every 30 compressions
- d) Allow complete chest recoil

A Only a

B Only a & b

C a, b & c

D a, c & d

CORRECT

RIGHT ANSWER

OK

D. a, c & d

WHY THIS IS RIGHT

High-quality CPR requires a compression rate of 100-120/min, a 30:2 compression-to-ventilation ratio, and complete chest recoil after each compression. The depth in adults should be 5-6 cm, so option b (3-4 cm) is incorrect; hence a, c & d are correct.

QUESTION

| At what pressure is the pop-up valve released in bag and mask ventilation?

A 30-40 cm of H₂O

CORRECT

B 40-50 cm of H₂O

C 50-60 cm of H₂O

D 60-70 cm of H₂O

RIGHT ANSWER

OK

A. 30-40 cm of H₂O

WHY THIS IS RIGHT

In bag-and-mask ventilation, the pop-off (pressure-release) valve opens at 30-40 cm H₂O to prevent barotrauma.

This protects the neonatal lungs from excessive pressure during positive-pressure ventilation.

The valve can be overridden only in special situations like severe lung stiffness.

QUESTION

During anaesthesia, a patient is encountered in a 'cannot intubate, cannot ventilate' (CICV) situation. What is the immediate next step in management?

A Administer succinylcholine and retry intubation

B Perform needle cricothyroidotomy

CORRECT

C Insert a supraglottic airway device

D Wake the patient up / nasal airway

RIGHT ANSWER

OK

B. Perform needle cricothyroidotomy

WHY THIS IS RIGHT

A true CICV scenario represents impending hypoxic arrest. The priority is not intubation anymore, it's oxygenation immediately. When both intubation and ventilation fail, the immediate lifesaving action is emergency front-of-neck access, most rapidly done via needle cricothyroidotomy. Attempts at further intubation or supraglottic devices waste critical time.

Option A- Give succinylcholine and retry intubation

Wrong. Paralysis may already be present and repeated attempts worsen hypoxia.

Option C- Insert supraglottic airway device

Would be correct in failed intubation *if ventilation is possible*.

QUESTION

In the given image, what is the primary function of the marked structure?



- A Facilitation of vocal cord visualization
- B Monitoring airway pressure
- C Prevention of air leakage and aspiration**
- D Suctioning of lower respiratory tract secretions

CORRECT

RIGHT ANSWER

OK

C. Prevention of air leakage and aspiration

WHY THIS IS RIGHT

The cuff of a tracheostomy tube forms a seal against the tracheal wall, primarily preventing air leakage during ventilation and reducing the risk of aspiration. This ensures effective delivery of positive-pressure ventilation while protecting the airway from oropharyngeal secretions.

QUESTION

Identify the mask in the image below?



- A Venturi mask
- B Hudson mask
- C Nebulizer mask
- D Non-rebreathing mask**

CORRECT

RIGHT ANSWER

- OK
- D. Non-rebreathing mask**

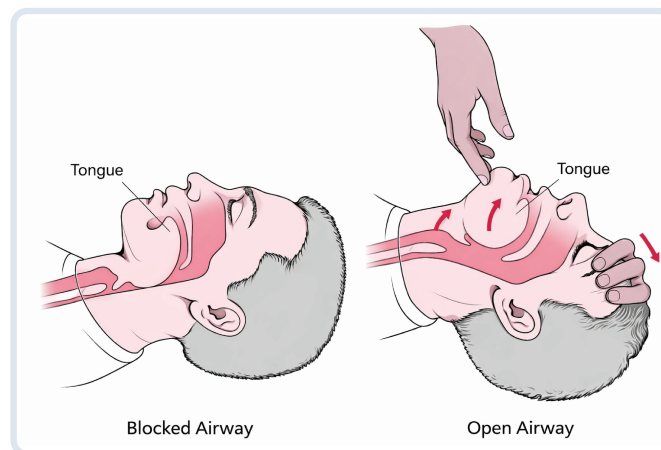
WHY THIS IS RIGHT

A non-rebreathing mask is identified by its reservoir bag and one-way valves, allowing delivery of high FiO_2 (up to 90-100%). These features distinguish it from Hudson, Venturi, or nebulizer masks.



QUESTION

Identify the maneuver being performed in the given image?



A Head tilt, chin lift

CORRECT

B Jaw thrust

C Head extension

D In line manual stabilization

RIGHT ANSWER

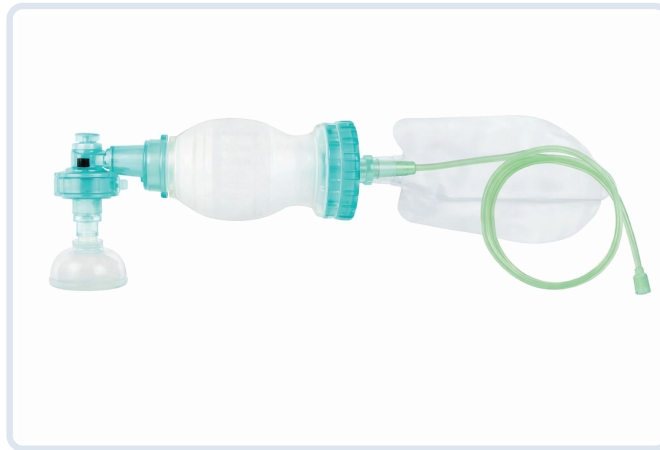
OK A. Head tilt, chin lift

WHY THIS IS RIGHT

The image depicts the head tilt-chin lift maneuver, where one hand tilts the forehead back while the other lifts the chin. This is the standard method to open the airway in an unresponsive patient without suspected cervical spine injury.

QUESTION

Relieving pressure of pop off valve in this device is?



A 10-20 mm Hg

B 10-20 cm H₂O

C 30-40 mm Hg

D 30-40 cm H₂O

CORRECT

RIGHT ANSWER

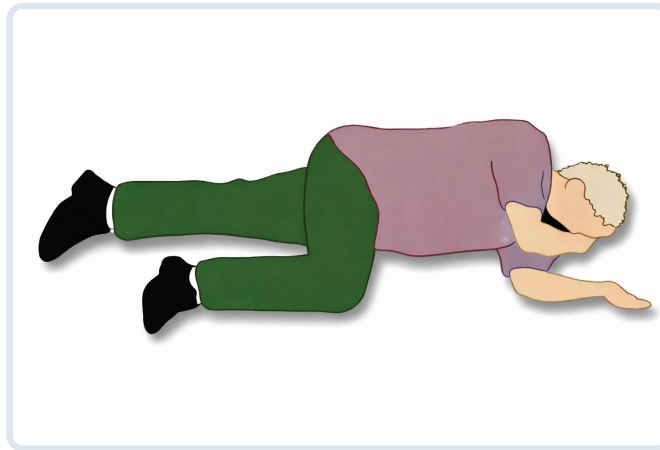
OK D. 30-40 cm H₂O

WHY THIS IS RIGHT

In an Ambu bag, the pop-off (pressure-release) valve opens at 30-40 cm H₂O to prevent excessive airway pressures and protect the lungs from barotrauma. This safety limit aligns with standard paediatric and adult manual ventilation devices.

QUESTION

| This position is given in which patients?



- A** Pulse absent Breathing present
- B** Pulse absent Breathing absent
- C** Unconscious with Pulse present Breathing present CORRECT
- D** Conscious with Pulse present Breathing present

RIGHT ANSWER

OK

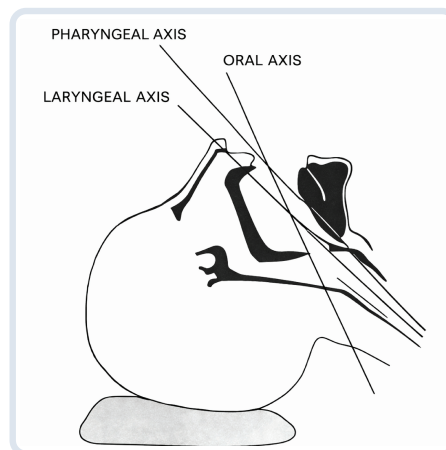
C. Unconscious with Pulse present Breathing present

WHY THIS IS RIGHT

The position shown is the recovery position, used for an unconscious patient who has a pulse and is breathing. It maintains airway patency, prevents tongue obstruction, and reduces the risk of aspiration by allowing secretions to drain.

QUESTION

| What is true about this position?



CORRECT

A Sniffing position for intubation

B Ideal position for Bougie insertion

C Ideal position for Neurosurgery

D Neck position for intubation

RIGHT ANSWER

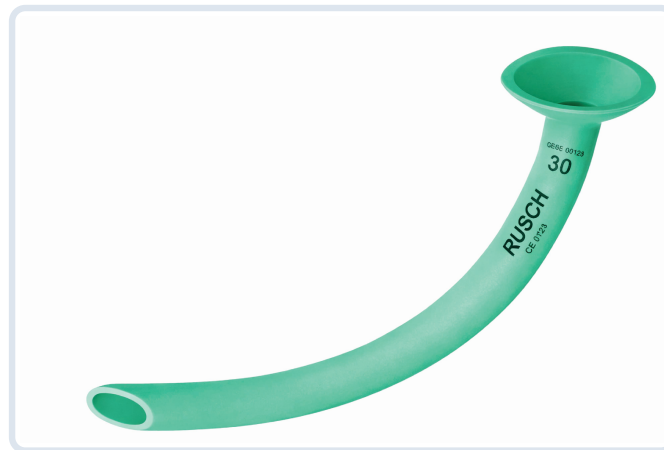
OK **A. Sniffing position for intubation**

WHY THIS IS RIGHT

The image depicts the sniffing position, where the neck is flexed and the head is extended at the atlanto-occipital joint. This alignment brings the oral, pharyngeal, and laryngeal axes into a more favourable line, making it the standard and most effective position for endotracheal intubation.

QUESTION

Identify the instrument:



- A Oropharyngeal airway
- B Ovassapian airway
- C Nasopharyngeal airway
- D Uncuffed endotracheal tube

CORRECT

RIGHT ANSWER

OK

C. Nasopharyngeal airway

WHY THIS IS RIGHT

A nasopharyngeal airway is a soft, flexible tube inserted through the nostril to maintain airway patency, especially in conscious or semi-conscious patients who cannot tolerate an oropharyngeal airway. Its bevelled tip and flared end distinguish it from other airway adjuncts.



QUESTION

Which of the following statements is correct about the procedure shown in the image below?



- A** It can be used for effective ventilation up to 6 hours
- B** It is used to measure central venous pressure
- C** It should be followed by tracheostomy
- D** Work of breathing will be more than face mask ventilation

CORRECT

RIGHT ANSWER

- OK** **C. It should be followed by tracheostomy**

WHY THIS IS RIGHT

The image represents needle cricothyrotomy, an emergency temporary airway procedure. It provides short-term oxygenation only and must be followed by a definitive airway such as tracheostomy. It cannot ventilate for hours, does not measure CVP, and work of breathing is not less than with a face mask.

QUESTION

A patient diagnosed with acute respiratory distress syndrome (ARDS) has a $\text{PaO}_2/\text{FiO}_2$ ratio below 100, consistent with severe ARDS. What should be the next appropriate ventilatory management strategy for this patient?

- A Low PEEP and high tidal volume
- B High PEEP and low tidal volume**
- C High tidal volume with prolonged expiratory pause
- D Immediate prone positioning

CORRECT

RIGHT ANSWER

- OK **B. High PEEP and low tidal volume**

WHY THIS IS RIGHT

Severe ARDS ($\text{PaO}_2/\text{FiO}_2 < 100$) requires lung-protective ventilation, which includes low tidal volume (≈ 6 mL/kg PBW) to prevent volutrauma, barotrauma and high PEEP to maintain alveolar recruitment and improve oxygenation. Prone positioning is helpful but not the *first* step; the cornerstone strategy remains high PEEP + low tidal volume.

QUESTION

A child was being delivered oxygen by nasal canula at 3L/min. What is the FiO₂ being delivered?

A 25%

B 30%

CORRECT

C 40%

D 45%

RIGHT ANSWER

OK

B. 30%

WHY THIS IS RIGHT

FiO₂ increases by about 4% per litre of oxygen flow.

Starting from room air (21%): Nasal cannula delivers FiO₂ $\approx 21\% + 4\%$ per L/min.

At 3 L/min $\rightarrow 21\% + (3 \times 4\%) = 32\%$, but standard clinical rounding places it closest to 30% for exam purposes.

QUESTION

A child presents with acute respiratory distress. On examination, the abdomen was scaphoid. Which of the following should not be performed in this patient:

A PPV with ETT

B Bag and mask ventilation

CORRECT

C Oxygen therapy

D Intubation

RIGHT ANSWER

OK

B. Bag and mask ventilation

WHY THIS IS RIGHT

A scaphoid abdomen with respiratory distress suggests congenital diaphragmatic hernia, where bag-mask ventilation can worsen gastric insufflation and further compromise lung expansion. Oxygen and intubation with gentle PPV are appropriate; bag-mask ventilation must be avoided.

QUESTION

Identify the 2nd generation supraglottic airway device from the options given below.

A LMA Fastrach

B LMA Flexible

C LMA Proseal

CORRECT

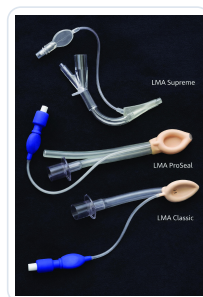
D AMBU LMA

RIGHT ANSWER

OK C. LMA Proseal

WHY THIS IS RIGHT

LMA ProSeal is a second-generation supraglottic airway featuring a gastric drainage channel, improved oropharyngeal seal pressure, and enhanced protection against aspiration. The other LMAs listed are first-generation devices without gastric access.



QUESTION

| AMBU AURA40 is what generation LMA?

A First

CORRECT

B Second

C Third

D Fourth

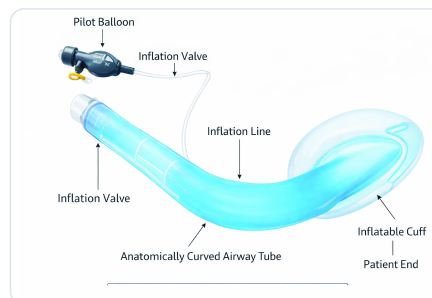
RIGHT ANSWER

OK

A. First

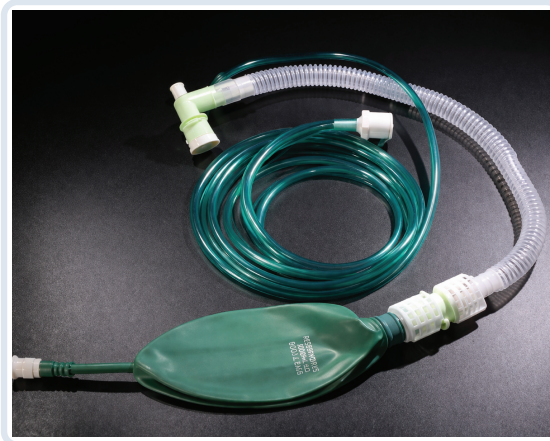
WHY THIS IS RIGHT

AMBU AURA40 is a first-generation LMA because it has a single airway tube, lacks a gastric drainage channel, and functions as a reusable variant of the classic LMA. The “40” denotes up to 40 uses (made of silicone and can be autoclaved up to 40 times), unlike second-generation devices such as AuraGain that include gastric access for reduced aspiration risk.



QUESTION

| Jackson Rees circuit is used in:



CORRECT

A Paediatric controlled ventilation

B Adult controlled ventilation

C Obstetric ventilation

D Cardiac patients

RIGHT ANSWER

OK **A. Paediatric controlled ventilation**

WHY THIS IS RIGHT

Jackson Rees (Mapleson F) circuit is a low-resistance, minimal dead-space system ideal for paediatric anaesthesia, including controlled and spontaneous ventilation. Its open-ended reservoir bag allows effective manual control, making it preferred for children who have less tidal volume, cannot tolerate high resistance and are sensitive to dead space rather than adults or special populations like obstetric or cardiac patients.

QUESTION

A patient undergoing surgery develops malignant hyperthermia. Genetic testing reveals an RYR1 gene mutation. Which type of ion channel is primarily affected?

- A Sodium
- B Chloride
- C Potassium

D Calcium

CORRECT

RIGHT ANSWER

D. Calcium

WHY THIS IS RIGHT

The RYR1 gene encodes the ryanodine receptor, a calcium-release channel on the sarcoplasmic reticulum. Mutations cause uncontrolled calcium efflux, triggering the hypermetabolic crisis of malignant hyperthermia. Thus, the affected ion channel is calcium.

QUESTION

Which of the following is the drug of choice for preoperative antibiotic prophylaxis in a patient undergoing cardiac surgery?

A Penicillin G

B Erythromycin

C Azithromycin

D Cefazolin

CORRECT

RIGHT ANSWER

OK D. Cefazolin

WHY THIS IS RIGHT

Cefazolin is the preferred prophylactic antibiotic for cardiac surgery because it provides broad coverage against common skin flora, particularly *Staphylococcus aureus* and *Streptococci*, and has a favourable safety profile. It is the standard first-line agent unless the patient has a severe β -lactam allergy.

QUESTION

| What is the recommended dose of adrenaline for a child during cardiac arrest?

CORRECT

A 0.01 mg/kg (1ml/kg of 1:10,000 solution)

B 0.1 mg/kg (1ml/kg of 1:1000 solution)

C 0.001 mg/kg (1ml/kg of 1:1,00,000 solution)

D 0.5 mg/kg (1ml/kg of 1:2000 solution)

RIGHT ANSWER

OK **A. 0.01 mg/kg (1ml/kg of 1:10,000 solution)**

WHY THIS IS RIGHT

The recommended paediatric cardiac arrest dose of adrenaline is 0.01 mg/kg, which corresponds to 1 mL/kg of 1:10,000 (0.1 mg/mL) solution. This is the standard IV/IO dosing per resuscitation guidelines.

QUESTION

A patient is undergoing implant surgery for his upper limb. On giving general anaesthesia he develops tachycardia, sudden raise in body temperature and rigidity of muscles. What drug is most likely to have caused this?

A Halothane

CORRECT

B Propofol

C Etomidate

D Nitrous oxide

RIGHT ANSWER

OK

A. Halothane

WHY THIS IS RIGHT

Halothane is a potent trigger of malignant hyperthermia, presenting with tachycardia, hyperthermia, and muscle rigidity after induction. Among the options, only halothane is known to precipitate this reaction (along with succinylcholine), making it the most likely causative agent.

QUESTION

Which of these is used for immediate reversal of Vecuronium in a patient for normal kidney function?

A Sugammadex

CORRECT

B Physostigmine

C Rivastigmine

D Succinylcholine

RIGHT ANSWER

OK A. Sugammadex

WHY THIS IS RIGHT

Sugammadex reverses vecuronium by directly encapsulating the drug, producing rapid and complete recovery from neuromuscular blockade. It is the preferred agent for immediate reversal when renal function is normal; acetylcholinesterase inhibitors are slower and ineffective for deep blockade.

QUESTION

| Which of these is true regarding this?



- A** EMLA means equal mixture of LA
- B** It contains lignocaine and ropivacaine
- C** Methemoglobinemia is a complication of this cream
- D** 1 gm of 5% cream contains lignocaine 50mg

CORRECT

RIGHT ANSWER

- OK** **C. Methemoglobinemia is a complication of this cream**

WHY THIS IS RIGHT

EMLA cream is a 1:1 eutectic mixture of lidocaine (2.5%) and prilocaine (2.5%). Prilocaine can produce methemoglobinemia, making this the correct statement. The acronym does not stand for "equal mixture," and the cream does not contain ropivacaine. The dosing statement about 5% lignocaine is also incorrect.

QUESTION

A patient develops hyperthermia, generalized muscle rigidity, and increased end-tidal CO₂ (EtCO₂) shortly after administration of succinylcholine and sevoflurane during anaesthesia. Which of the following is the drug of choice for management of this condition?

A Sodium bicarbonate

B Adrenaline

C Dantrolene

CORRECT

D Naloxone

RIGHT ANSWER

OK

C. Dantrolene

WHY THIS IS RIGHT

This presentation is classic for malignant hyperthermia, triggered by succinylcholine and volatile agents like sevoflurane. The definitive treatment is dantrolene, which inhibits calcium release from the sarcoplasmic reticulum, reversing muscle rigidity, stops the hypermetabolic crisis, and rising EtCO₂.

QUESTION

After administration of a neuromuscular blocker, a patient suddenly develops flushing of the face and becomes hypotensive. Which of the following drugs is most likely responsible?

A Rocuronium

B Vecuronium

C Atracurium

CORRECT

D Cisatracurium

RIGHT ANSWER

OK

C. Atracurium

WHY THIS IS RIGHT

Atracurium is known to cause histamine release, leading to flushing, hypotension, and sometimes bronchospasm. Rocuronium, vecuronium, and cisatracurium have minimal histamine-releasing properties, making atracurium the most likely culprit in this presentation.

QUESTION

Which inhaled anaesthetic agent is preferred for paediatric induction of anaesthesia?

A Sevoflurane

CORRECT

B Desflurane

C Isoflurane

D Halothane

RIGHT ANSWER

OK A. Sevoflurane

WHY THIS IS RIGHT

Sevoflurane is preferred for paediatric induction because it has a non-pungent smell, causes minimal airway irritation, and provides rapid induction and smooth recovery. Desflurane and isoflurane are pungent and airway irritants, and halothane is avoided due to cardiac and hepatic risks.

QUESTION

A patient was undergoing surgery under general anaesthesia. For intubation, 90 mg of rocuronium was given, but the anaesthesiologist was unable to intubate the patient. What is the drug given for immediate reversal of the neuromuscular blockade?

A Neostigmine

B Sugammadex

CORRECT

C Glycopyrrolate

D Atropine

RIGHT ANSWER

OK B. Sugammadex

WHY THIS IS RIGHT

Sugammadex provides rapid and complete reversal of rocuronium (non-depolarizing neuromuscular blocker) by encapsulating the drug molecule directly, independent of acetylcholinesterase activity. It is the preferred agent when immediate reversal is required after failed intubation with rocuronium.

QUESTION

| Which of these statements is incorrect about Thiopentone?

- A** It is highly lipid soluble
- B** It achieves maximum concentration in brain after IV infusion
- C** Redistribution to adipose tissue and muscle is seen
- D** The rapid decline in its effect is due to renal excretion

CORRECT

RIGHT ANSWER

OK

D. The rapid decline in its effect is due to renal excretion

WHY THIS IS RIGHT

Thiopentone is highly lipid soluble, causing rapid brain uptake immediately after IV dosing. Its effect terminates due to redistribution from the brain to muscle and adipose tissue-not renal excretion. Renal clearance contributes only to late drug elimination, not the rapid fall in anaesthetic effect. The rapid termination of action is due to redistribution, not elimination. Metabolism happens later in the liver, and renal excretion is not responsible for the immediate recovery.

QUESTION

I IV anesthetic agent that causes adrenocortical suppression is:

- A** Propofol
- B** Etomidate
- C** Thiopentone
- D** Ketamine

CORRECT

RIGHT ANSWER

- OK** **B. Etomidate**

WHY THIS IS RIGHT

Etomidate inhibits 11- β -hydroxylase, blocking cortisol and aldosterone synthesis, leading to dose-dependent adrenocortical suppression. Even a single dose can reduce steroid production for 6-12 hours. Because of this, it is avoided in septic or critically ill patients who depend on adequate stress-hormone response.

QUESTION

Which of the following drug is used to reverse muscle relaxation induced by vecuronium?

A Neostigmine

CORRECT

B Atropine

C Physostigmine

D Succinylcholine

RIGHT ANSWER

OK A. Neostigmine

WHY THIS IS RIGHT

Vecuronium is a non-depolarizing neuromuscular blocker, reversed by increasing acetylcholine at the NMJ. Neostigmine, an acetylcholinesterase inhibitor, achieves this and is routinely used with an anticholinergic (glycopyrrolate/atropine) to counter muscarinic effects. Succinylcholine is depolarizing and not used for reversal.

QUESTION

A patient undergoes cardiac surgery with muscle relaxant Vecuronium. The surgery was completed and which of the following agents is used for the reversal of this drug?

A Baclofen

B Neostigmine

CORRECT

C Atropine

D Dantrolene

RIGHT ANSWER

OK

B. Neostigmine

WHY THIS IS RIGHT

Vecuronium is a non-depolarizing neuromuscular blocker reversed by neostigmine, an acetylcholinesterase inhibitor that increases acetylcholine at the neuromuscular junction. It is commonly paired with an anticholinergic agent to counter muscarinic effects.

Neostigmine is an acetylcholinesterase inhibitor.

It inhibits breakdown of ACh -> ↑ ACh in synaptic cleft -> outcompetes vecuronium -> reversal of paralysis.

QUESTION

Which of the following true regarding benzodiazepines and barbiturates:

1. Both act on GABA-A chloride channel
2. Alcohol causes superadded CNS depression
3. Flumazenil reverses the action of both
4. Thiopentone has short duration of action due to its rapid metabolism

A Both 1 and 2 are correct

CORRECT

B Only 1 correct

C Only 3 correct

D All are correct

RIGHT ANSWER

OK A. Both 1 and 2 are correct

WHY THIS IS RIGHT

Benzodiazepines and barbiturates both act on the GABA-A chloride channel, and alcohol produces additive CNS depression with them.

Flumazenil reverses benzodiazepines only, not barbiturates, it is a competitive antagonist at the benzodiazepine binding site on GABA-A receptors.

Thiopentone's short action is due to redistribution, not rapid metabolism, it moves quickly from brain -> muscle -> fat.

Metabolism is actually slower. Therefore, statements 1 and 2 are correct.

QUESTION

The waveform marked in the image represents which of the following physiological parameters?



A Arterial oxygen saturation

B End-tidal carbon dioxide

CORRECT

C Functional residual capacity

D Tidal volume

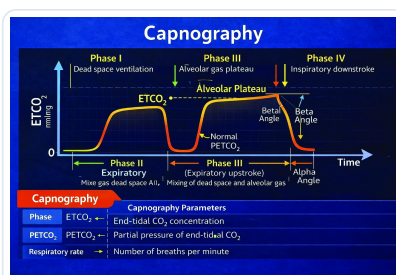
RIGHT ANSWER

OK

B. End-tidal carbon dioxide

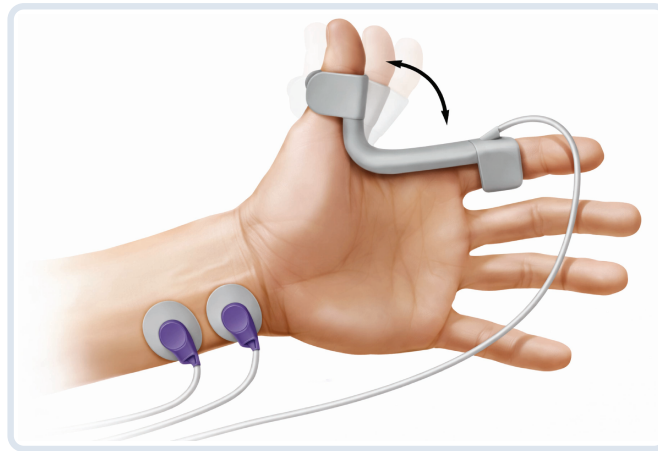
WHY THIS IS RIGHT

The square-like waveform shown is a capnography trace, which measures end-tidal CO_2 during expiration. It reflects CO_2 elimination, with normal EtCO_2 values around 35-45 mmHg.



QUESTION

During general anaesthesia, which nerve is commonly monitored using a nerve stimulator to assess neuromuscular blockade?



A Radial nerve

B Ulnar nerve

CORRECT

C Median nerve

D Tibial nerve

RIGHT ANSWER

OK

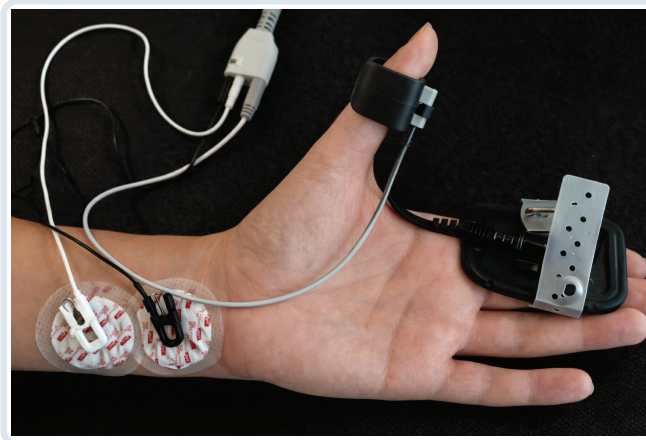
B. Ulnar nerve

WHY THIS IS RIGHT

The ulnar nerve is routinely used for neuromuscular blockade monitoring because the adductor pollicis muscle provides reliable, easily observed responses to train-of-four stimulation and correlates well with recovery from paralysis.

QUESTION

The image given below shows neuromuscular monitoring of the patient after anaesthesia. What is the most commonly used nerve for monitoring?



CORRECT

A Ulnar nerve

B Median nerve

C Radial nerve

D Metacarpal nerve

RIGHT ANSWER

OK

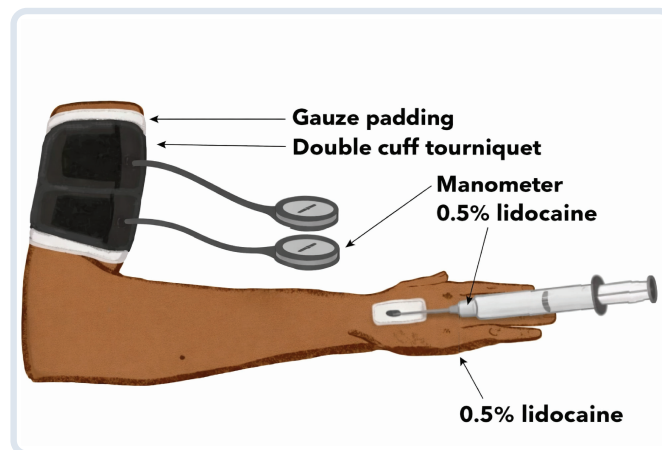
A. Ulnar nerve

WHY THIS IS RIGHT

The ulnar nerve is the most commonly used nerve for neuromuscular monitoring, typically assessed at the adductor pollicis muscle. It provides reliable evaluation of train-of-four (TOF) responses and correlates well with recovery from neuromuscular blockade.

QUESTION

Identify the image:



A Radial nerve block

B Axillary block

C Bier's block

CORRECT

D Wrist block

RIGHT ANSWER

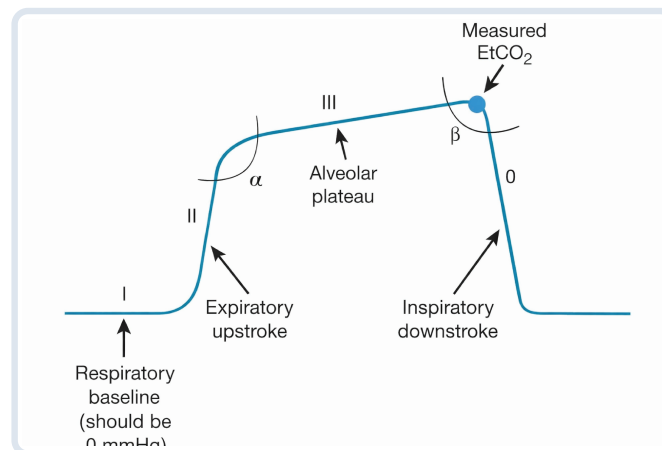
OK C. Bier's block

WHY THIS IS RIGHT

Bier's block (IVRA) involves placing a tourniquet on the limb and injecting local anaesthetic into a distal vein after exsanguination. The setup in the image—tourniquet with intravenous access on the limb—matches the classic appearance of Bier's block.

QUESTION

What does phase III represent in the below image?



- A Inspiration
- B Expiration of dead space air
- C Expiration of mixed air
- D Alveolar plateau

CORRECT

RIGHT ANSWER

- OK
- D. Alveolar plateau

WHY THIS IS RIGHT

Phase III of the capnography waveform represents the alveolar plateau, where exhaled gas is predominantly alveolar. CO₂ concentration rises gradually until the end of this phase, giving the EtCO₂ value. It reflects alveolar ventilation, V/Q matching & quality of ventilation.

QUESTION

A 60 years old male patient was undergoing laparoscopic cholecystectomy. During the surgery, it was observed that there was a sudden decrease in etCO₂ to 8 mm Hg, SpO₂ was 90%, BP dropped to 80/50 mm Hg and peak airway pressure was observed to be 18 mm Hg. Which of the most probable diagnosis?

- A** Pneumothorax
- B** CO₂ embolism
- C** Endobronchial intubation
- D** Bronchospasm

CORRECT

RIGHT ANSWER

- OK** **B. CO₂ embolism**

WHY THIS IS RIGHT

A sudden sharp fall in EtCO₂, hypotension, mild desaturation, and normal airway pressures during laparoscopy strongly point to CO₂ embolism. Pneumothorax, bronchospasm, and endobronchial intubation all increase airway pressures, which is not seen here. CO₂ embolism is a known complication of pneumoperitoneum.

QUESTION

A person has suffered from chest trauma resulting in fracture of 2-6th ribs. He is being given pain relief by IV analgesic agents. Which of these blocks will be helpful in pain relief?

A Cervical plexus

B Supraclavicular block

C Thoracic epidural

CORRECT

D Lumbar epidural

RIGHT ANSWER

OK C. Thoracic epidural

WHY THIS IS RIGHT

Rib fractures from T2-T6 produce severe chest wall pain best relieved by thoracic epidural, which provides segmental analgesia to the corresponding dermatomes. Cervical and supraclavicular blocks do not cover thoracic levels, and lumbar epidural is too low to provide effective analgesia for upper thoracic ribs.

QUESTION

Which of the statements is true about lumbar puncture?

1. LP is urgently indicated if CT scan is negative in suspected SAH
2. Post dural puncture head ache is common in females and older adults
3. Meningitis after LP is an unusual side effect
4. LP is safely done in thrombocytopenia more than 10000

A 1, 2, 3 and 4

B 1, 2, 3

C 3,4

D 1,3

CORRECT

RIGHT ANSWER

OK D. 1,3

WHY THIS IS RIGHT

LP is indicated after a negative CT in suspected subarachnoid haemorrhage to detect xanthochromia (true). Meningitis is a rare complication (true). PDPH is more common in young females, not older adults, and LP is unsafe at platelet counts around 10,000 (requires $\geq 50,000$). Hence only statements 1 and 3 are correct.

QUESTION

A patient is scheduled for laparoscopic surgery under general anaesthesia in a day care setting. Which of the following factors makes him unsuitable for day care surgery?

- A** Home is 45 minutes drive away from the hospital
- B** The surgical procedure is expected to last slightly over 1 hour
- C** No attendant is available at home to care for the patient postoperatively
- D** ASA grade 3

CORRECT

RIGHT ANSWER

- OK** **C. No attendant is available at home to care for the patient postoperatively**

WHY THIS IS RIGHT

A mandatory requirement for day-care surgery is the presence of a responsible adult caregiver at home after discharge. Lack of an attendant is an absolute contraindication, making option C the correct factor that makes this patient unsuitable for ambulatory surgery.

QUESTION

| Which of the following criteria corresponding to ASA grade III?

- A** Mild illness
- B** Moderate illness
- C** Severe illness which is constant threat to life
- D** **Severe illness**

CORRECT

RIGHT ANSWER

- OK** **D. Severe illness**

WHY THIS IS RIGHT

ASA III corresponds to severe systemic disease that limits activity but is not a constant threat to life. The disease is significant and limits activity, but not actively life threatening at rest. It is more serious than mild or moderate illness but not as critical as ASA IV, where disease poses a continual threat.

QUESTION

In a patient on mechanical ventilation and placed in prone position which of the following about PEEP is true?

A Prevents atelectasis of lung and alveolar collapse

CORRECT

B Reduces CO₂ in alveoli

C Decreases inspiratory pressure

D Increases venous return and thus maintains cardiac output

RIGHT ANSWER

OK **A. Prevents atelectasis of lung and alveolar collapse**

WHY THIS IS RIGHT

PEEP helps keep alveoli open and prevents atelectasis, especially beneficial in prone-positioned ventilated patients. It improves oxygenation by maintaining functional residual capacity, while the other options are incorrect: PEEP does not reduce CO₂, does not lower inspiratory pressures, and typically reduces venous return.

QUESTION

| Which of the following is incorrect regarding High-Quality CPR?

- A** Chest compressions at 100-120/min
- B** Allow adequate chest recoil
- C** Chest compression to Rescue breath ratio is 30:2
- D** Depth of compression must be 3-4cm

CORRECT

RIGHT ANSWER

- OK** D. Depth of compression must be 3-4cm

WHY THIS IS RIGHT

High-quality adult CPR requires compression depth of at least 5 cm (about 2 inches) to generate adequate cardiac output. Recommended rate is 100-120/min with complete chest recoil between compressions.

Parameter	Recommended Value
Compression rate	100-120/min
Compression depth	5-6 cm (2-2.4 inches)
Compression : ventilation	30 : 2
Chest recoil	Must be complete
Interruptions	<10 seconds

During chest recoil: Negative intrathoracic pressure develops

This allows:

- Venous blood to return to the heart
- Cardiac chambers to refill

If recoil is incomplete:

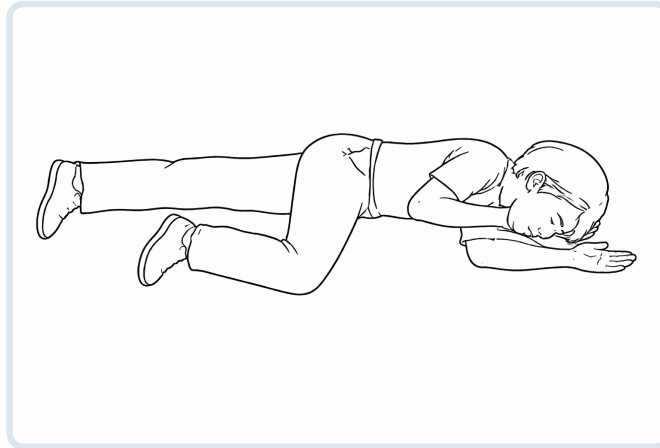
- Cardiac output decreases
- Coronary perfusion falls

The standard compression-to-ventilation ratio is 30:2 for single rescuer CPR.

Thus, a depth of 3-4 cm is inadequate, making option D incorrect.

QUESTION

| During resuscitation, when is the given position?



- A** Unconsciousness with pulse and breathing absent
- B** Unconsciousness with pulse present and breathing absent
- C** Unconsciousness with pulse and breathing present
- D** Unconsciousness with pulse absent and breathing present

CORRECT

RIGHT ANSWER

OK

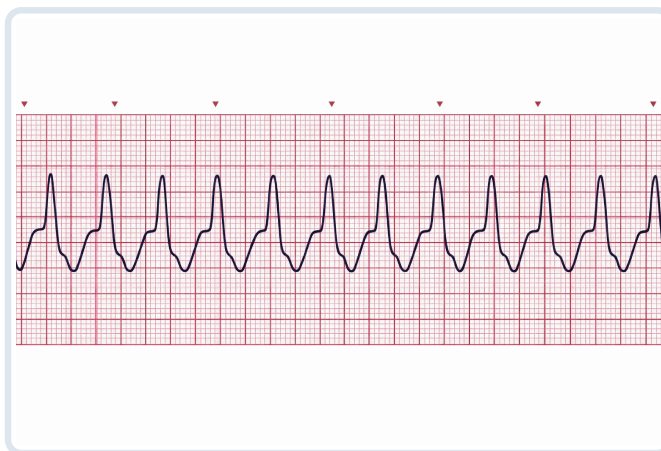
C. Unconsciousness with pulse and breathing present

WHY THIS IS RIGHT

This is the recovery position, used for an unconscious patient who has both pulse and spontaneous breathing. It maintains airway patency and prevents aspiration by allowing secretions to drain.

QUESTION

A 2-year-old child is undergoing CPR. He is pulseless and shows the below ECG. What is the next step?



- A** Give shock with 2 J/kg and check pulse
- B** Give shock with 2 J/kg and continue CPR for 2 mins
- C** Synchronized cardioversion
- D** Continue CPR till pulse is back

CORRECT

RIGHT ANSWER

- OK** B. Give shock with 2 J/kg and continue CPR for 2 mins

WHY THIS IS RIGHT

The ECG shows ventricular tachycardia in a pulseless child. Paediatric cardiac arrest algorithms mandate unsynchronized defibrillation at 2 J/kg, immediately followed by 2 minutes of CPR before the next rhythm check. Synchronized cardioversion is not used in pulseless rhythms.

QUESTION

A 2-year-old child suddenly becomes unresponsive following a peanut ingestion. What is the next immediate step in management?

- A** Start back blows
- B** Intubate immediately with an endotracheal tube
- C** Give abdominal thrusts

D Start chest compressions

CORRECT

RIGHT ANSWER

OK **D. Start chest compressions**

WHY THIS IS RIGHT

A suddenly unresponsive child with suspected FBAO is treated as cardiac arrest. When a child becomes unresponsive, you immediately start the CPR sequence, beginning with chest compressions, not back blows or abdominal thrusts. Airway maneuvers are done only during CPR cycles.

QUESTION

Which of these are the components of high-quality CPR?

- a) Compression rate 100-120/min
- b) Depth of compression in adults is 3-4 cm
- c) Ventilation of 2 breaths for every 30 compressions
- d) Allow complete chest recoil

A Only a

B Only a & b

C a, b & c

D a, c & d

CORRECT

RIGHT ANSWER

OK

D. a, c & d

WHY THIS IS RIGHT

High-quality CPR requires a compression rate of 100-120/min, a 30:2 compression-to-ventilation ratio, and complete chest recoil after each compression. The depth in adults should be 5-6 cm, so option b (3-4 cm) is incorrect; hence a, c & d are correct.