Mechanical Ventilation

1. mechanical ventilation

1.1 Mechanical Ventilation

1.2 Basic Physiology—Part 1

- Respiratory Cycle
- Oxygenation
- Ventilation
- Static Lung Volumes
1.3 Respiratory Cycle

Respiratory Cycle

- Inhalation & Exhalation
- Ingress & Egress
- But...
- Oxygenation & Ventilation
  - This division has the greatest utility
    - Breaking down problems
    - Implementing interventions
  - Any time there is uncertainty, start here

1.4 Oxygenation

Oxygenation

- How can we ascertain success?
  - Arterial Blood Gas (Abg)
    - PaO2
      - Reveals blood that enters trachea and diffuses into blood
  - Alveolar Gas Equation
    - P(A)O2 = FiO2 (Patm - Ph2o) - PCO2/RQ
    - Alveolar gas = Ingress (O2) - Egress (CO2)
    - Respiratory Quotient (RQ)
      - CO2 produced per O2 metabolized = 0.8
      - Depends on diet and metabolism
    - (A-a)gradient tells you oxygenating capability
1.5 Alveolar Gas Equation

Alveolar Gas Equation

\[
P_{A\text{O}_2} = P_{I\text{O}_2} - \frac{P_{a\text{CO}_2}}{R}
\]

\[
P_{A\text{O}_2} = F_i\text{O}_2(P_{atm} - P_{H_2O}) - \frac{P_{a\text{CO}_2}}{0.8}
\]

1.6 Oxygenation

Oxygenation

- Can we tell success with SpO2?
  - Only if patient is on Room Air
  - For example:
    - 100% FiO2 could give you an PAO2 of 700mmHg if perfect V/Q
    - SpO2 is 100% so all looks good
  - Actual A8G PaO2 reveals 100mmHg
  - Thus (A-a) Gradient = 600mmHg!!
  - This is a limitation of pulse oximetry assessing oxygenation
1.7 Ventilation

Ventilation

- Minute Ventilation = Tidal Volume x Respiratory Rate
  - \( V_e = V_t \times RR \)
- Success is revealed by CO2
  - High CO2 = Hypoventilation
  - Low CO2 = Hyperventilation
- Respiratory rate?
  - NO...can be tachypnic and hypoventilating
  - Only moving dead space gas
  - Consider breathing through a long snorkel:
    - Only small amount of each breath reaching gas exchange

1.8 The most useful way to divide the respiratory cycle is...

(Multiple Choice, 10 points, unlimited attempts permitted)

- a. Egress and ingress
- b. Oxygenation and ventilation
- c. Inspiration and expiration
- d. Active and passive
- e. Inhalation and exhalation

<table>
<thead>
<tr>
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<td>Egress and ingress</td>
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Oxygenation and ventilation
Inspiration and expiration
Active and passive
Inhalation and exhalation

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**
1.9 Which is NOT true about RQ?

(Multiple Choice, 10 points, unlimited attempts permitted)
2. Which is NOT true about RQ?

- a. Stands for Respiratory Quotient
- b. Compares O2 consumed to CO2 produced
- c. Based on diet
- d. It is part of the Alveolar Gas equation
- e. All of the above are true

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**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

2. Which is NOT true about RQ?

- a. Stands for Respiratory Quotient
- b. Correct
- c. Basic
- d. It is
- e. All

Correct
That's right! You selected the correct response.

Incorrect (Slide Layer)

2. Which is NOT true about RQ?

- a. Stands for Respiratory Quotient
- b. Correct
- c. Basic
- d. It is
- e. All

Incorrect
You did not select the correct response.
1.10 When is pulse oximetry of limited value for assessing oxygenation?

(Multiple Choice, 10 points, unlimited attempts permitted)

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<td>If the patient has a reading less the 80%</td>
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<tr>
<td>If the patient has mitral regurgitation</td>
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<tr>
<td>If the patient is hyperthermic</td>
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<tr>
<td>X</td>
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</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

3. When is pulse oximetry of limited value for assessing oxygenation?

- a. If the patient has a reading less than 80%
- b. If the patient is hyperthermic
- X c. If the patient is on significant supplemental oxygenation with 100% saturation
- d. If the patient is bradycardic
- e. If the patient has mitral regurgitation

Correct

That's right! You selected the correct response.

Continue
1.11 The adequacy of ventilation is appreciated by:

(Multiple Choice, 10 points, unlimited attempts permitted)
4. The adequacy of ventilation is appreciated by:

- a. Respiratory rate
- b. Tidal volume
- c. Chest excursion
- d. Carbon dioxide concentration
- e. Oxygen concentration

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**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
4. The adequacy of ventilation is appraised by:

- a. Respiratory rate
- b. Tidal volume
- c. Compliance
- d. Capnometry
- e. Oxygen saturation

That is incorrect. Please try again.

1.12 Static Lung Volumes

Static Lung Volumes
1.13 Functional Residual Capacity

Functional Residual Capacity

- Residual Volume + Expiratory Reserve Volume
- Equilibrium of opposing forces
  - Chest Wall (expanding) + Lung Parenchyma (collapsing)
  - Forces are idiosyncratic
    - Chest wall: Obesity, pregnancy, paralysis, body position
    - Lung parenchyma: emphysema, ARDS

1.14 Functional Residual Capacity
1.15 Functional Residual Capacity

Functional Residual Capacity

- Significance...
  - Consider FRC as a reservoir
  - Normally filled with 21% oxygen and 78% nitrogen
  - Can De-Nitrogenate (i.e., Pre-oxygenate)
  - Now filled with 100% oxygen
  - Creates time for airway instrumentation
  - May manipulate FRC to improve safety profile

1.16 Closing Capacity

Closing Capacity

[Diagram showing functional residual capacity and closing volume]
1.17 Closing Capacity (CC)

Closing Capacity (CC)

- CC = Residual Volume + Closing Volume
- Alveoli collapse at the CC
  - Law of Laplace
  - Pressure = $2 \times \frac{t}{r}$
  - Surface tension ($t$) reduced by surfactant
  - Radius inversely impacts airway closure

1.18 Laplace’s Law

Laplace's Law

Two bubbles with the same surface tension ($T$), but different radii

$P = \frac{2T}{r}$

- $\downarrow$ radius, $\uparrow$ $P$
- $\uparrow$ radius, $\downarrow$ $P$

What happens if these two are interconnected?

Pressure Gradient exists between the two — Flow would occur from small bubble to the larger one
1.19 Closing Capacity (CC)

Closing Capacity (CC)

- CC normally less than FRC so alveoli remain open
- Dependent on:
  - Age
  - Body position
  - Pathology

1.20 Closing Capacity (CC)

Closing Capacity (CC)

[Graph showing functional residual capacity (FRC) and closing capacity in upright and supine positions]
1.21 Lung Volumes and Capacities

![Lung Volumes and Capacities Table]

1.22 Which is NOT true of Functional Residual Capacity?

(Multiple Choice, 10 points, unlimited attempts permitted)

5. Which is NOT true of Functional Residual Capacity?

- a. Made up of Expiratory Reserve volume and Residual volume
- b. Different for everyone
- c. Is always greater than closing capacity
- d. A balance of forces between the chest wall and lung parenchyma
- e. Typically 30-40cc per kilogram

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</table>
Different for everyone

X Is always greater than closing capacity

A balance of forces between the chest wall and lung parenchyma

Typically 30-40cc per kilogram

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
5. Which is NOT true of Functional Residual Capacity?

- a. Made up of Expansory Reserve volume and Residual volume
- b. Different from Vital Capacity
- c. Is the volume of air remaining in the lungs at the end of normal expiration
- d. All of the above are parenchyma
- e. Try again

1.23 Closing capacity...

(Multiple Choice, 10 points, unlimited attempts permitted)
6. **Closing capacity**...

- a. Is always less than the FRC
- b. Does not depend on surfactant
- c. Has a collapsing pressure that is directly proportional to its radius
- d. Follows laplacian physics for its likelihood of collapse
- e. Is unrelated to FRC

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**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

6. Closing capacity...

- a. Is always less than the FRC
- b. Does not depend on perfusion
- c. Has proportion to its radius
- d. For the same vessel, is independent of perfusion
- e. Is

Incorrect (Slide Layer)

6. Closing capacity...

- a. Is always less than the FRC
- b. Does not depend on perfusion
- c. Has proportion to its radius
- d. For the same vessel, is independent of perfusion
- e. Is
1.24 Which will most likely have a CC greater than the FRC?

(Multiple Choice, 10 points, unlimited attempts permitted)

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</thead>
<tbody>
<tr>
<td>X</td>
<td>Paralyzed, anesthetized, obese person in supine position</td>
</tr>
</tbody>
</table>

Try Again (Slide Layer)
Tall, thin, sleeping person

A normal habitus person walking around

A normal habitus person anesthetized in the beach chair position

The are all the same likelihood

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
7. Which will most likely have a CC greater than the FRC?

a. Paralyzed, anesthetized, obese person in supine position
b. Tall, thin, normal person in standing position
c. Adult with severe COPD in supine position
d. Adult with severe COPD in sitting position
e. Tall, thin, normal person in sitting position

Incorrect (Slide Layer)

Try Again (Slide Layer)
1.25 Basic Physiology—Part 2

- Indications for Mechanical Ventilation
  - Ventilation Failure
  - Oxygenation Failure
  - A somewhat artificial division
    - One type of failure may involving both
    - But helps to compartmentalize and remember

1.26 Ventilation Failure

- Neurologic Disease
- Muscular Disease
- Anatomic Disease
1.27 Neurologic pathology

Neurologic Pathology

- Central Pathology
  - Sedation
  - Benzodiazepines
  - Opiates
  - Stroke
  - Trauma
  - Traumatic Brain Injury

1.28 Neurologic Pathology

Neurologic Pathology

- Spinal cord pathology
  - Trauma
  - Virus
  - Stroke
1.29 Neurologic Pathology

Neurologic Pathology

- Peripheral Nerve Pathology
  - Neuromuscular relaxants
  - Guillain-Barre syndrome

1.30 Anatomic Pathology

Anatomic Pathology

- Chest Wall Pathology
  - Flail chest
  - Congenital diaphragmatic hernia
  - Kyphoscoliosis
- Pleural Injury
  - Pneumothorax
  - Hemothorax
  - Pleural effusions
1.31 Anatomic Pathology

Anatomic Pathology

- Airway Pathology
  - Burn
  - Epiglottis
  - Bronchospasm
  - Foreign body

1.32 Which of the following is not a reason that a person might require intubation?

(Multiple Choice, 10 points, unlimited attempts permitted)

8. Which of the following is not a reason that a person might require intubation?

- a. Stroke
- b. Migraine
- c. Narcotic overdose
- d. Head injury
- e. Muscle relaxant administration
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**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

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- a. Stroke
- b. Migraine
- c. Narcotic overdose
- d. Head injury
- e. Muscle relaxant administration

Correct

That's right! You selected the correct response.

Continue
1.33 Which of the following is not a reason that a person might require intubation?

(Multiple Choice, 10 points, unlimited attempts permitted)
9. Which of the following is not a reason that a person might require intubation?

- a. Spinal cord injury
- b. Sleep deprivation
- c. Flail chest
- d. Tension pneumothorax
- e. Hemothorax

**Correct Choice**

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**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

9. Which of the following is not a reason that a person might require intubation?
   a. Spinal cord injury
   b. Severe airway obstruction
   c. Fitting
   d. Trauma
   e. Hemothorax

Incorrect (Slide Layer)

9. Which of the following is not a reason that a person might require intubation?
   a. Spinal cord injury
   b. Severe airway obstruction
   c. Fitting
   d. Trauma
   e. Hemothorax
1.34 Which of the following is NOT a reason that a person might require intubation?

(Multiple Choice, 10 points, unlimited attempts permitted)
<table>
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<tbody>
<tr>
<td></td>
<td>Epiglottis</td>
</tr>
<tr>
<td></td>
<td>Airway burn</td>
</tr>
<tr>
<td></td>
<td>Foreign body</td>
</tr>
<tr>
<td>X</td>
<td>Strep throat</td>
</tr>
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<td></td>
<td>COPD exacerbation</td>
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</table>

**Feedback when correct:**

That’s right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

![Image of a question slide](image-url)
Incorrect (Slide Layer)

10. Which of the following is NOT a reason that a person might require intubation?
   - a. Epiglottis
   - b. Alveolar
   - c. Focal
   - d. Stroke
   - e. CO2 retention situation

1.35 Oxygenation Failure

Oxygenation Failure

- Gas Exchange Problem
  - V / Q Mismatch
  - Diffusion abnormality
  - VO2 / DO2 imbalance
  - FiO2
1.36 Ventilation / Perfusion Mismatch

- Matching is a spectrum
  - Dead space
  - $V/Q = 1:1$
  - Shunt

1.37 Dead Space

- Ventilated areas which do not participate in gas exchange

Total Deadspace = Anatomic + Alveolar + Mechanical

- Anatomic Deadspace: airways leading to the alveoli
- Alveolar Deadspace: ventilated areas in the lungs without blood flow
- Mechanical Deadspace: artificial airways including ventilator circuits
1.38 Dead space equation

Dead Space Equation

\[ V_d = \frac{P_{ACO_2} - P_{ECO_2}}{P_{ACO_2}} \]

\[ V_d = \frac{P_{aCO_2} - P_{ECO_2}}{P_{aCO_2}} \cdot V_T \]

1.39 Shunt

Shunt

Veno-Arterial Shunt
Classical Principle

Aveoli
Capillary
Lung vessel
O_{2}
1.40 Shunt

Magnitude of pulmonary shunts
1. Normal shunt = 2-5%
2. Shunt over 5% could indicate problem
3. Shunt over 15% indicates pathological problem
4. Shunt increases with age

1.41 V/Q Matching Spectrum

V/Q Matching Spectrum
1.42 V / Q Matching : West Zones

1.43 In Ventilation/Perfusion matching, a shunt refers to...

(Multiple Choice, 10 points, unlimited attempts permitted)

- a. Areas not perfused but ventilated
- b. Areas with ratios greater than 1
- c. A pathology easily treated with increasing FiO2
- d. States that can be either intracardiac or extracardiac
- e. Low blood flow states

Correct Choice

Areas not perfused but ventilated
### Feedback when correct:

That's right! You selected the correct response.

### Feedback when incorrect:

You did not select the correct response.

### Correct (Slide Layer)

11. In Ventilation/Perfusion matching, a shunt refers to...

- a. Areas not perfused but ventilated
- b. Areas with ratios greater than 1
- c. A pathology easily treated with increasing FiO2
- d. States that can be either intracardiac or extracardiac
- e. Low blood flow states

Correct

That's right! You selected the correct response.
1.44 Which is NOT true regarding Dead Space?

(Multiple Choice, 10 points, unlimited attempts permitted)
12. Which is NOT true regarding Dead Space?

- a. Lung areas that are ventilated but not perfused
- b. Can develop in massive acute blood loss
- c. Can be responsive to supplemental oxygen
- d. Refers to V / Q ratios less than zero
- e. Can be anatomic, alveolar, or apparatus in nature

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**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.
12. Which is NOT true regarding Dead Space?

- a. Lung areas that are ventilated but not perfused
- b. Capillary bed
- c. Capillary bed
- d. Rebreather
- e. C. Capillary bed

Correct
That's right! You selected the correct response.

Incorrect
You did not select the correct response.

Continue
1.45 In using the *Dead Space Equation*...

*(Multiple Choice, 10 points, unlimited attempts permitted)*

<table>
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<tr>
<td>Need End Tidal CO2</td>
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<tr>
<td>X</td>
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**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

![Image of correct response feedback](image-url)
1.46 Which of the following is NOT true of pulmonary shunt?

(Multiple Choice, 10 points, unlimited attempts permitted)
14. Which of the following is NOT true of pulmonary shunt?

- a. Normal shunt is 2-5% of pulmonary blood flow
- b. Normally involves the Bronchial Veins
- c. Shunt 30% is pathologic
- d. Shunt increases with age
- e. Normally involves the Thesbian Veins

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**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
14. Which of the following is NOT true of pulmonary shunt?

- a. Normal shunt is 2.5% of pulmonary blood flow
- b. Normal shunt is 5% of pulmonary blood flow
- c. Shunt affects the lungs
- d. Shunt involves the Thiesian Veins
- e. Normally involves the Thiesian Veins

Correct (Slide Layer)

Incorrect (Slide Layer)
1.47 *In the upright lung, the V/Q matching spectrum...*

(*Multiple Choice, 10 points, unlimited attempts permitted*)

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<td>Areas of high V/Q are at the base</td>
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<tr>
<td>Areas of Low V/Q are at the apex</td>
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<tr>
<td>----------------------------------</td>
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**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

15. In the upright lung, the V/Q matching spectrum...

- a. Areas of high V/Q are at the base
- b. Areas of high V/Q are at the base
- c. The ratio increases from bottom to top
- d. The ratio is the same from top to bottom
- e. Stays the same regardless of hemodynamics
1.48 What is not true of the V / Q matching West Zones?

(Multiple Choice, 10 points, unlimited attempts permitted)
16. What is not true of the V / Q matching West Zones?

- a. Depend on arterial pressure
- b. Depend on venous pressure
- c. Depend on interstitial pressure
- d. Depend on alveolar pressure
- e. Depend on hematocrit

Correct Choice

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Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.
Correct (Slide Layer)

16. What is not true of the V / Q matching West Zones?

- a. Depend on arterial pressure
- b. Depend on...
- c. Depend on...
- d. Depend on...
- e. Depend on...

Incorrect (Slide Layer)

16. What is not true of the V / Q matching West Zones?

- a. Depend on arterial pressure
- b. Depend on...
- c. Depend on...
- d. Depend on...
- e. Depend on...

Correct
That's right! You selected the correct response.

Incorrect
You did not select the correct response.
16. What is not true of the V / Q matching West Zones?

- a. Depend on arterial pressure
- b. Depends
- c. Depends
- d. Depends
- e. Depends

Incorrect.
That is incorrect. Please try again.

1.49 Oxygenation Failure

Oxygenation Failure

- Gas Exchange Problem
  - V / Q mismatch
  - Diffusion abnormality
  - VO2 / DO2 imbalance
  - FiO2
1.50 Diffusion Abnormality

- Gas Exchange Problem
- Evaluated with DLCO
- Pathology:
  - Emphysema
  - Idiopathic Pulmonary Fibrosis
  - Sarcoidosis
  - Pulmonary Hypertension
  - Interstitial Pneumonitis
  - Pulmonary Vasculitis

1.51 Oxygenation Failure

- Gas Exchange Problem
  - V/Q mismatch
  - Diffusion abnormality
  - VO2 / DO2 imbalance
  - FiO2
1.52 VO2 / DO2 Imbalance

VO2 / DO2 Imbalance

- Oxygen consumption exceeds Oxygen Delivery
- Causes:
  - Decreases in Cardiac Output
  - Preload
  - Heart rate
  - Contractility
  - Increases in Oxygen Extraction
  - Hypermetabolic states
  - Sepsis

1.53 Oxygenation Failure

Oxygenation Failure

- Gas Exchange Problem
  - V / Q Mismatch
  - Diffusion abnormality
  - VO2 / DO2 imbalance
  - FiO2
1.54 FiO2

FiO2

- Inadequate oxygen concentration
- Requires elevated concentration
- Change in barometric pressure
- Oxygen displaced by other gas

1.55 Regarding lung diffusion abnormality...

(Multiple Choice, 10 points, unlimited attempts permitted)

17. Regarding lung diffusion abnormality...

- a. Can be measured with DLCO
- b. May be abnormal in COPD
- c. May be abnormal with pulmonary edema
- d. May be abnormal in pulmonary fibrosis
- e. All of the above are true

Correct Choice

Can be measured with DLCO
May be abnormal in COPD

May be abnormal with pulmonary edema

May be abnormal in pulmonary fibrosis

X All of the above are true

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.

Correct (Slide Layer)
1.56 During oxygenation failure from DO2 / VO2 imbalance...

(Multiple Choice, 10 points, unlimited attempts permitted)
18. **During oxygenation failure from DO2 / VO2 imbalance...**

- a. The primary cause is hypoventilation
- b. Is unlikely to occur from a myocardial infarction
- c. Can use lactate as a marker for imbalance
- d. The metabolic state of the person does not matter
- e. The volume status of the person does not matter

<table>
<thead>
<tr>
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<th>Choice</th>
</tr>
</thead>
<tbody>
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</tr>
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<tr>
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</tr>
<tr>
<td>The volume status of the person does not matter</td>
<td></td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
18. During oxygenation failure from DO2 / VO2 imbalance...

- a. The primary cause is hypoventilation
- b. Ischemia
- c. Correct
- d. That's not the right answer
- e. That's not the right answer

Correct (Slide Layer)

Incorrect (Slide Layer)
1.57 Which of the following can NOT lead FiO2 to cause oxygenation failure?

(Multiple Choice, 10 points, unlimited attempts permitted)
<table>
<thead>
<tr>
<th>Correct</th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High altitude climbs</td>
</tr>
<tr>
<td></td>
<td>Overdose on narcotics</td>
</tr>
<tr>
<td></td>
<td>Removing required supplemental oxygen</td>
</tr>
<tr>
<td></td>
<td>Supplying hypoxic gas mixture</td>
</tr>
<tr>
<td>X</td>
<td>Hyperventilating</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That’s right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

19. Which of the following can NOT lead FiO2 to cause oxygenation failure?

- a. High altitude climbs
- b. Overdose on narcotics
- c. Removing required supplemental oxygen
- d. Supplying hypoxic gas mixture
- e. Hyperventilating

Correct
19. Which of the following can NOT lead FIO2 to cause oxygenation failure?

- a. High altitude climbs
- b. Oxygen
- c. Rebreathing
- d. Surgery
- e. Hyperventilating

Incorrect (Slide Layer)

Try Again (Slide Layer)
1.58 Mechanical Ventilation

Mechanical Ventilation

- Volume Controlled (ACV)
- Pressure Controlled (PCV)
- SIMV
- Pressure Support (PS)

1.59 Volume Controlled Ventilation

Volume Controlled Ventilation

There are two forms:
1. Assist-Controlled Ventilation
2. Controlled Ventilation

- Controlled Ventilation
  - Provider dials in desired tidal volume & respiratory rate
  - Settings delivered regardless of effort (no additional breaths permitted)
  - Gas flows to patient to deliver preset tidal volume
  - May occur despite Peak Airway Pressures
1.60 Volume Controlled Ventilation

Volume Controlled Ventilation

- Assist-Controlled Ventilation
  - Vt and RR determined by provider
  - Any patient respiratory effort...
    - Triggers preset tidal volume
    - Defaults to initial settings if no effort attempted
    - Provider selects trigger threshold sensitivity

1.61 Controlled Ventilation
1.62 Volume Controlled

Volume Controlled

- Excessive Breaths can lead to “breath-stacking”
  - Also called Auto-PEEP
  - Can obstruct preload or cause pneumothorax
  - Causes increase Work of Breathing
  - Risk of significant Patient-ventilator Dyssynchrony

1.63 Breath-Stacking

Breath-Stacking

- Not enough time allowed for complete exhalation
- Each inspired breath “Stack” on top of the previous breath
- Significant risk of hemodynamic changes and barotrauma (Ptx)

1.64 In Assist-Controlled Ventilation, which of the following is NOT true?

(Multiple Choice, 10 points, unlimited attempts permitted)
In Assist-Controlled Ventilation, which of the following is NOT true?

- a. The patient receives at least the preset tidal volume and respiratory rate
- b. Additional patient effort results in additional breaths
- c. This mode of ventilation leads to increased Work of Breathing
- d. The patient influences tidal volumes
- e. The patient influences respiratory rate

Correct Choice

<table>
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<th>Choice</th>
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</thead>
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</table>

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.
Correct (Slide Layer)

20. In Assist-Controlled Ventilation, which of the following is NOT true?

- a. The patient receives at least the preset tidal volume and respiratory rate
- b. A patient should be able to control the flow rate
- c. The patient controls the depth of breathing
- d. The patient makes the decision on when to breathe
- e. The patient influences respiratory rate

Incorrect (Slide Layer)

20. In Assist-Controlled Ventilation, which of the following is NOT true?

- a. The patient receives at least the preset tidal volume and respiratory rate
- b. A patient should be able to control the flow rate
- c. The patient controls the depth of breathing
- d. The patient makes the decision on when to breathe
- e. The patient influences respiratory rate
1.65 What is NOT true about Auto-PEEP?

(Multiple Choice, 10 points, unlimited attempts permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is also called “breath-stacking”</td>
</tr>
</tbody>
</table>
Can disrupt hemodynamics

Can cause barotrauma

X Is common in pressure support ventilation

Results from incomplete exhalation

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
1.66 The Assist component of Assist-Controlled Ventilation refers to:

(Multiple Choice, 10 points, unlimited attempts permitted)
22. The Assist component of Assist-Controlled Ventilation refers to:

- a. Mandatory breaths delivered to the patient
- b. Mandatory tidal volumes delivered to the patient
- c. Each breath triggered by the patient
- d. A guarantee that the patient will not “breath-stack”
- e. Pressure support to augment each effort by the patient

Correct Choice:

<table>
<thead>
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Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.
Correct (Slide Layer)

22. The Assist component of Assist-Controlled Ventilation refers to:

- a. Mandatory breaths delivered to the patient
- b. Mandatory breaths delivered by the ventilator
- c. Enabling a “back-up” breath
- d. A group of breaths delivered to the patient
- e. Preventing the patient from taking a breath

[Correct message]

Incorrect (Slide Layer)

22. The Assist component of Assist-Controlled Ventilation refers to:

- a. Mandatory breaths delivered to the patient
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- e. Preventing the patient from taking a breath

[Incorrect message]
22. The Assist component of Assist-Controlled Ventilation refers to:

- a. Mandatory breaths delivered to the patient
- b. Mandatory ventilation
- c. Each breath can be “backed”
- d. A breath delivered in response to a “call”
- e. Pressure delivered to control the patient

Incorrect
That is incorrect. Please try again.

1.67 Pressure-Controlled Ventilation

Pressure-Controlled Ventilation

- Provider dials in RR and fixed Pressure to deliver breath
- Volume of each breath varies due to different pulmonary mechanics:
  - Different from person to person
  - Different in same person but different scenarios
    - Patient position, muscle relaxation, abdominal pressures, ...
- Breath delivery
  - Breath filling pressure maintained at same level
  - Decelerating flow wave allows for large tidal volumes
1.68 Pressure-Control

Pressure-Control

Compare to Volume-Controlled:
1. Constant pressure level delivered
2. Volume augmentation
3. Decelerating gas flow

1.69 Pressure-Controlled Ventilation

Pressure-Controlled Ventilation

- Advantages
  - Less likelihood of barotrauma
  - Greater Patient-Ventilator synchrony
  - Larger tidal volumes with smaller Driving pressure

1.70 Regarding Pressure-Controlled Ventilation, which of the following is true?

(Multiple Choice, 10 points, unlimited attempts permitted)
## Question 23

**Regarding Pressure-Controlled Ventilation, which of the following is true?**

- a. The provider selects the desired respiratory rate and tidal volume
- b. The patient receives a guaranteed tidal volume
- c. The patient may accidentally hypoventilate
- d. The delivered tidal volume never changes
- e. The selected pressure results in the same tidal volume for all people

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</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

23. Regarding Pressure-Controlled Ventilation, which of the following is true?

a. The provider selects the desired respiratory rate and tidal volume.

b. The ventilator delivers the desired tidal volume.

c. The selected pressure results in the same tidal volume for all people.

d. The ventilator adjusts the pressure to achieve the desired tidal volume.

e. The selected pressure results in the same tidal volume for all people.

Incorrect (Slide Layer)

23. Regarding Pressure-Controlled Ventilation, which of the following is true?

a. The provider selects the desired respiratory rate and tidal volume.

b. The ventilator delivers the desired tidal volume.

c. The selected pressure results in the same tidal volume for all people.

d. The ventilator adjusts the pressure to achieve the desired tidal volume.

e. The selected pressure results in the same tidal volume for all people.
23. Regarding Pressure-Controlled Ventilation, which of the following is true?

- a. The provider selects the desired respiratory rate and tidal volume.
- b. The pressure is delivered in a varying level.
- c. The delivered breath is a decelerating flow wave pattern.
- d. The patient does not have a pressure limit to each breath.
- e. The selected pressure results in the same tidal volume for all people.

1.71 In Pressure-Controlled Ventilation...

(Multiple Choice, 10 points, unlimited attempts permitted)

24. In Pressure-Controlled Ventilation...

- a. The pressure is delivered in a varying level.
- b. Patient position does not impact tidal volume.
- c. The delivered breath is a decelerating flow wave pattern.
- d. The patient does not have a pressure limit to each breath.
- e. Patient habitus does not impact tidal volume.

| Correct Choice | The pressure is delivered in a varying level |
Patient position does not impact tidal volume

X The delivered breath is a decelerating flow wave pattern

The patient does not have a pressure limit to each breath

Patient habitus does not impact tidal volume

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.

Correct (Slide Layer)
1.72 Compared to Volume-Controlled Ventilation, Pressure-Controlled Ventilation...

(Multiple Choice, 10 points, unlimited attempts permitted)
25. Compared to Volume-Controlled Ventilation, Pressure-Controlled Ventilation...

- a. Has a higher likelihood of barotrauma
- b. More Patient-Ventilator dysynchrony
- c. Smaller tidal volumes with same driving pressure
- d. Tidal volume size not guaranteed
- e. Same flow wave pattern

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<tr>
<td></td>
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</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
25. Compared to Volume-Controlled Ventilation, Pressure-Controlled Ventilation...

- a. Has a higher likelihood of barotrauma
- b. Minimizes the risk of barotrauma
- c. Smaller tidal volume
- d. Time to achieve a steady state
- e. Same flow wave pattern

Correct (Slide Layer)

Incorrect (Slide Layer)
Try Again (Slide Layer)

25. Compared to Volume-Controlled Ventilation, Pressure-Controlled Ventilation...

- a. Has a higher likelihood of barotrauma
- b. More frequent barotrauma
- c. Synchronized ventilation
- d. Time limited
- e. Same flow wave pattern

Incorrect
That is incorrect. Please try again.

Try Again

1.73 SIMV

SIMV
- Synchronized-Intermittent Mandatory Ventilation
- Breaths are delivered in a preset RR and volume
- Patient can breath independently between breaths
  - No additional effort is provided for extra breaths
  - Patient maintains some independence in ventilation
- Used to wean patient from ventilator
  - Progressively dial back mandatory breaths
  - Allow progressively more spontaneous ventilation
1.74 SIMV

SIMV

- Dots reveal unsupported additional breaths.
- Squares show preset respiratory rate and tidal volumes.
- Top reveals controlled ventilation without additional triggering.
- Middle shows additional triggering leading to rapid RR.

1.75 SIMV

SIMV

- Can augment spontaneous breaths with pressure support.
- Can add PEEP to the system as well to assist oxygenation.

1.76 Which is not true regarding SIMV?

(Multiple Choice, 10 points, unlimited attempts permitted)
26. Which is not true regarding SIMV?

- a. Stands for Synchronized Intermittent Mandatory Ventilation
- b. Allows spontaneous breaths by the patient
- c. Attempts to synchronize mandatory breaths with spontaneous efforts
- d. Provider selects baseline tidal volume and respiratory rate
- e. All of the above are true

Correct Choice

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<tr>
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</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

26. Which is not true regarding SIMV?

- a. Stands for Synchronized Intermittent Mandatory Ventilation
- b. All
- c. Attaches to a patient with specific respiratory rate
- d. Promotes a spontaneous respirator rate
- e. All of the above are true

Incorrect (Slide Layer)

26. Which is not true regarding SIMV?

- a. Stands for Synchronized Intermittent Mandatory Ventilation
- b. All
- c. Attaches to a patient with specific respiratory rate
- d. Promotes a spontaneous respirator rate
- e. All of the above are true
1.77 Concerning SIMV...

(Multiple Choice, 10 points, unlimited attempts permitted)

26. Which is not true regarding SIMV?

- a. Stands for Synchronized Intermittent Mandatory Ventilation
- b. All of the above are true
- c. Attenuates patient breathing effort
- d. Preserves patient respiratory rate
- e. All of the above are true

Correct Choice

Is never used to liberate patients from the ventilator
X  Can implement pressure support to augment spontaneous efforts

Patient is perfectly synchronized with the ventilator

Can not apply PEEP to abet oxygenation

All of the above are true

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.

Correct (Slide Layer)
27. Concerning SIMV...

- a. Is never used to liberate patients from the ventilator
- b. Can be set to only provide partial support
- c. Patients in SIMV do not need to be on a ventilator
- d. Cannot be set to only provide partial support
- e. All of the above are true

Incorrect

You did not select the correct response.

Try Again

That is incorrect. Please try again.
1.78 Pressure Support Ventilation

Pressure Support Ventilation

- Patient initiates every breath
- Ventilator delivers support with preset pressure value
- Patient regulates
  - Own respiratory rate
  - Own tidal volume
- Changes in Pulmonary Mechanics or patient effort
  - Affects tidal volume and RR

1.79 Pressure Support Ventilation

Pressure Support Ventilation

- Increasing effort or Pressure Support will increase delivered volume
- Decreasing effort or Pressure Support will decrease delivered volume

1.80 Which of the following is not true about Pressure-Support Ventilation?

(Multiple Choice, 10 points, unlimited attempts permitted)
28. Which of the following is not true about Pressure-Support Ventilation?

- a. The patient triggers every breath
- b. The provider can change the pressure support to varying tidal volume
- c. Tidal volume sizes are not guaranteed
- d. Can be used to liberate patient from the ventilator
- e. All of the above are true

<table>
<thead>
<tr>
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<th>Feedback when correct:</th>
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<tr>
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<td></td>
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</table>

Feedback when incorrect:

You did not select the correct response.
Correct (Slide Layer)

28. Which of the following is not true about Pressure-Support Ventilation?
   
   a. The patient triggers every breath
   b. The patient is responsive to
   c. The patient
   d. Correct
   e. All of the above are true

Incorrect (Slide Layer)

28. Which of the following is not true about Pressure-Support Ventilation?
   
   a. The patient triggers every breath
   b. The patient is responsive to
   c. The patient
   d. Incorrect
   e. All of the above are true
1.81 In Pressure Support Ventilation...

(Multiple Choice, 10 points, unlimited attempts permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>The patient can never go apneic</td>
</tr>
</tbody>
</table>
The tidal volumes never change

X The patient experiences less work of breathing

Pulmonary mechanics and disease process should not be considered when selecting settings

Higher likelihood of barotrauma compared to Volume controlled

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
1.82 Which of the following is true for Pressure Support Ventilation?

(Multiple Choice, 10 points, unlimited attempts permitted)
30. Which of the following is true for Pressure Support Ventilation?

<table>
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<tr>
<td>a. Increasing effort or Pressure Support will increase delivered volume</td>
</tr>
<tr>
<td>b. Decreasing effort or Pressure Support will decrease delivered volume</td>
</tr>
<tr>
<td>c. There is greater patient-ventilator synchrony</td>
</tr>
<tr>
<td>d. Sedation can lead to hypoventilation</td>
</tr>
<tr>
<td>e. All of the above are true</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
30. Which of the following is true for Pressure Support Ventilation?

a. Increasing effort or Pressure Support will increase delivered tidal volume.

b. Decreasing effort will decrease delivered tidal volume.

c. The ventilator will automatically adjust the delivered tidal volume.

d. Sedation can lead to hypoventilation.

e. All of the above are true.

Correct (Slide Layer)

Incorrect (Slide Layer)
Try Again (Slide Layer)

30. Which of the following is true for Pressure Support Ventilation?
   
   a. Increasing effort or Pressure Support will increase dead space.
   
   b. Decreasing effort or Pressure Support will decrease dead space.
   
   c. This is incorrect. Please try again.
   
   d. Sedation can lead to hyperventilation
   
   e. All of the above are true

1.83 PEEP—Oxygenation Tool

PEEP-Oxygenation Tool

- Positive End-Expiratory Pressure
- Pressure in the lungs (above Atm) that exists in the lungs after expiration
- Coupled with FiO2 for tools to improve oxygenation
- Amount is dialed in by provider to mitigate atelectasis
  - Improves V / Q matching
  - Can reduce the rapid opening and closing of alveoli
  - ARDS net protocol to help oxygenation in next slide
1.84 FiO2 & PEEP to treat ARDS

<table>
<thead>
<tr>
<th>Conservative approach:</th>
</tr>
</thead>
</table>
| FiO2: 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.0 | PEEP: 5 5 8 10 10 12 14 20 22 24  
| Aggressive approach: |  
| FiO2: 0.30 0.40 0.50 0.60 0.70 0.80 0.90 1.0 | PEEP: 12 14 14 16 18 20 22 22 24  

1.85 Which of the following is NOT true of PEEP?  
(Multiple Choice, 10 points, unlimited attempts permitted)

- a. Stands for Positive End-Expiratory Pressure  
- b. Is utilized to improve ventilation  
- c. Excessive amounts can affect hemodynamics  
- d. Could create West Zone 1 in the lungs  
- e. Attenuates atelectasis

<table>
<thead>
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<tr>
<td>Stands for Positive End-Expiratory Pressure</td>
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<tr>
<td></td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td>X</td>
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**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

31. Which of the following is NOT true of PEEP?

- a. Stands for Positive End-Expiratory Pressure
- b. Is utilized to improve ventilation
- c. Excessive amounts can affect hemodynamics
- d. Could create West Zone 1 in the lungs
- e. Attenuates atelectasis

**Correct**

That's right! You selected the correct response.
1.86 What is NOT true about ARDS Net Protocol?

(Multiple Choice, 10 points, unlimited attempts permitted)
32. What is NOT true about ARDS Net Protocol?

- a. Ramps FiO2 and PEEP in staircase fashion to help oxygenation
- b. Stresses the importance of utilizing lower inspired oxygen when possible
- c. Directs the addition AND subtraction of FiO2 and PEEP
- d. Is applicable to Non-ARDS patients as well
- e. All of the above are true

Correct Choice

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Ramps FiO2 and PEEP in staircase fashion to help oxygenation</td>
</tr>
<tr>
<td>Stresses the importance of utilizing lower inspired oxygen when possible</td>
</tr>
<tr>
<td>Directs the addition AND subtraction of FiO2 and PEEP</td>
</tr>
<tr>
<td>Is applicable to Non-ARDS patients as well</td>
</tr>
<tr>
<td>All of the above are true</td>
</tr>
</tbody>
</table>

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.
Correct (Slide Layer)

32. What is NOT true about ARDS Net Protocol?
   a. Ramps FiO2 and PEEP in staircase fashion to help oxygenation
   b. Sedation and sufficient inhaled oxygen
   c. Does not impact on FiO2 and PEEP
   d. Isolation
   e. All of the above are true

Incorrect (Slide Layer)

32. What is NOT true about ARDS Net Protocol?
   a. Ramps FiO2 and PEEP in staircase fashion to help oxygenation
   b. Sedation and sufficient inhaled oxygen
   c. Does not impact on FiO2 and PEEP
   d. Isolation
   e. All of the above are true
Try Again (Slide Layer)

32. What is NOT true about ARDS Net Protocol?

a. Ramps FiO2 and PEEP in staircase fashion to help oxygenation

b. Set: 8 ml/kg, but not more than 10 ml/kg

c. Divide tidal volume into 2 and 3 parts of ventilation and PEEP

d. Is it true that, less is better

e. All of the above are true

Incorrect
That is incorrect. Please try again.

1.87 Monitoring Lung Mechanics

Monitoring Lung Mechanics

• Proximal Airway Pressures
  ▪ Peak Inspiratory Pressure
  ▪ Plateau Pressure

• Thoracic Compliance
  ▪ Chest Wall compliance
  ▪ Lung compliance
1.88 **Proximal Airway Pressures (peak)**

Proximal Airway Pressures (Peak Pressure)

- Peak Airway Pressure
- Pressure in lungs generated during inspiration
- Combination of...
  - Resistance in airway
  - Elastance of lungs
- Ends with End-inspiration

1.89 **Peak Airway Pressure**

Peak Airway Pressure

- Increased Airway Resistance
  - Airway obstruction
  - Bronchospasm
  - Circuit kinking
  - Endotracheal tube obstruction
  - Anaphylaxis
1.90 Proximal Airway Pressures (plateau)

Proximal Airway Pressures (Plateau)

- Plateau pressure
- Pressure in the airway without any air movement
  - During inspiratory pause
- Determined by Compliance of lung
  - Inversely proportional to elastance

1.91 Plateau Pressure

Plateau Pressure

- Increased Plateau Pressure
  - Pneumothorax
  - Pneumonia
  - ARDS
  - Auto-PEEP
  - Obesity
  - Pulmonary fibrosis

1.92 Proximal Airway Pressures...

(Multiple Choice, 10 points, unlimited attempts permitted)
### 33. Proximal Airway Pressures...

- a. Include Peak Airway Pressure
- b. Include Plateau Pressure
- c. Involve the resistance of the airways
- d. Are monitored to mitigate barotrauma
- e. All of the above are true

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Include Peak Airway Pressure</td>
</tr>
<tr>
<td>Include Plateau Pressure</td>
</tr>
<tr>
<td>Involve the resistance of the airways</td>
</tr>
<tr>
<td>Are monitored to mitigate barotrauma</td>
</tr>
<tr>
<td>All of the above are true</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

33. Proximal Airway Pressures...

- a. Include Peak Airway Pressure
- Correct
- b. Incorrect
- c. Incorrect
- d. Incorrect
- e. Incorrect

Incorrect (Slide Layer)

33. Proximal Airway Pressures...

- a. Include Peak Airway Pressure
- Incorrect
- b. Incorrect
- c. You did not select the correct response.
- d. Incorrect
- e. Incorrect
1.93 Proximal Airway Pressures...

(Multiple Choice, 10 points, unlimited attempts permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>Can not tell you if bronchospasm is occurring</td>
</tr>
<tr>
<td>Will not alarm you if the endotracheal tube is kinked</td>
</tr>
<tr>
<td>------------------------------------------------------</td>
</tr>
<tr>
<td>Will not alarm you that the patient is coughing</td>
</tr>
<tr>
<td>X  Will not alarm you that the patient is apneic</td>
</tr>
<tr>
<td>None of the above are true</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

34. Proximal Airway Pressures...

- a. Can not tell you if bronchospasm is occurring
- b. Will not alarm you if the endotracheal tube is kinked
- c. Will not alarm you that the patient is coughing
- d. Will not alarm you that the patient is apneic
- e. None of the above are true

Correct
That's right! You selected the correct response.

Continue
1.94 The difference between the Peak Airway Pressure and the Plateau Pressure...

(Multiple Choice, 10 points, unlimited attempts permitted)
35. The difference between the Peak Airway Pressure and the Plateau Pressure...

- a. Depends on the elastance of the lung parenchyma
- b. Reflects the compliance of the lungs
- c. Depends on the resistance in the airways
- d. Does not take into consideration bronchial secretions or mucous plugs
- e. All of the above are true

Correct Choice

<table>
<thead>
<tr>
<th>Correct Choice</th>
<th>Feedback when correct:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depends on the elastance of the lung parenchyma</td>
<td>That's right! You selected the correct response.</td>
</tr>
<tr>
<td>Reflects the compliance of the lungs</td>
<td></td>
</tr>
<tr>
<td>X Depends on the resistance in the airways</td>
<td></td>
</tr>
<tr>
<td>Does not take into consideration bronchial secretions or mucous plugs</td>
<td></td>
</tr>
<tr>
<td>All of the above are true</td>
<td></td>
</tr>
</tbody>
</table>

Feedback when incorrect:

You did not select the correct response.
35. The difference between the Peak Airway Pressure and the Plateau Pressure...

- a. Depends on the elastance of the lung parenchyma
- b. Requires minimal volume
- c. Development of alveolar recruited
- d. Development of alveolar capillaries
- e. All of the above are true

Correct (Slide Layer)
35. The difference between the Peak Airway Pressure and the Plateau Pressure...
   a. Depends on the elastance of the lung parenchyma
   b. Right heart failure
   c. Dependent edema
   d. Dependent pulmonary edema
   e. All of the above are true

Incorrect
That is incorrect. Please try again.

1.95 Which of the following only increases the Plateau Pressure?

(Multiple Choice, 10 points, unlimited attempts permitted)

36. Which of the following only increases the Plateau Pressure?
   a. Airway obstruction
   b. Bronchospasm
   c. Circuit kinking
   d. Endotracheal tube obstruction
   e. Pulmonary edema

Correct Choice

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Airway obstruction</td>
</tr>
</tbody>
</table>

Published by Articulate® Storyline       www.articulate.com
Bronchospasm
Circuit kinking
Endotracheal tube obstruction
X Pulmonary edema

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.

Correct (Slide Layer)

36. Which of the following only increases the Plateau Pressure?
   a. Airway obstruction
   b. Bronchospasm
   c. Circuit kinking
   d. Endotracheal tube obstruction
   e. Pulmonary edema

Correct
1.96 Which of the following is NOT true about **Plateau Pressure**?

*(Multiple Choice, 10 points, unlimited attempts permitted)*
37. Which of the following is NOT true about Plateau Pressure?

- a. It reflects the pressure in the airway after air flow cessation
- b. It related to tissue elastance
- c. Is increased with Auto-PEEP
- d. Is not increased with a Pneumothorax
- e. Is elevated in obese patients

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>It reflects the pressure in the airway after air flow cessation</td>
</tr>
<tr>
<td>It related to tissue elastance</td>
</tr>
<tr>
<td>Is increased with Auto-PEEP</td>
</tr>
<tr>
<td>X                               Is not increased with a Pneumothorax</td>
</tr>
<tr>
<td>Is elevated in obese patients</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.
37. Which of the following is NOT true about Plateau Pressure?

- a. It reflects the pressure in the airway after airflow ceases.
- b. It is elevated in obese patients.
- c. Is.
- d. Is.
- e. Is elevated in obese patients.
37. Which of the following is NOT true about Plateau Pressure?

- a. It reflects the pressure in the airway after air flow ceases
- b. It is the pressure at end-expiration
- c. It is measured during gas flow
- d. It is elevated in obese patients
- e. It is elevated in obese patients

1.97 Thoracic Compliance

Thoracic Compliance

- = Change in Volume / Change in Pressure (V/P)
- Inversely proportional to elastance
- Compliance can involve static or dynamic measurement
  - Com dyn = Vt / (PIP - PEEP)
  - Compliance measured during gas flow
  - PIP = peak inspiratory pressure
  - Com stat = Vt / (Pplt - PEEP)
  - Compliance measured without gas flow
  - Pplt = Plateau pressure
1.98 Thoracic Compliance

Thoracic Compliance

Lung Compliance
- Involves lung parenchyma
- Fibrosis vs. Emphysema
- Blood and fluid volumes
- Surfactant deficiency
- Pneumothorax

Chest Wall Compliance
- Involves muscles and fat
- Morbidly obese
- Large breast
- Muscle relaxation
- Positioning

1.99 Thoracic compliance...

(Multiple Choice, 10 points, unlimited attempts permitted)

38. Thoracic compliance...
   a. Is directly proportional to elastance
   b. Change in pressure/change in volume (P/V)
   c. Is greater in COPD patients
   d. Is unrelated to work of breathing
   e. All of the above are true

Correct Choice

Is directly proportional to elastance
<table>
<thead>
<tr>
<th>Change in pressure/change in volume (P/V)</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

38. Thoracic compliance...

- a. Is directly proportional to elastance
- b. Change in pressure/change in volume (P/V)
- c. Is
- d. Is
- e. All
1.100 Which of the following is NOT true regarding thoracic compliance?

(Multiple Choice, 10 points, unlimited attempts permitted)
39. Which of the following is NOT true regarding thoracic compliance?

a. Can be subdivided into static and dynamic components
b. Static compliance requires plateau pressures measurements
c. Dynamic compliance requires peak airway pressures measurements
d. You do not need to consider the PEEP
e. All of the above are true

Correct Choice

Can be subdivided into static and dynamic components
Static compliance requires plateau pressures measurements
Dynamic compliance requires peak airway pressures measurements
You do not need to consider the PEEP
All of the above are true

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.
Correct (Slide Layer)

39. Which of the following is NOT true regarding thoracic compliance?

- a. Can be subdivided into static and dynamic components
- b. Static measurements
- c. Dynamic pressures
- d. You do not need to consider the PEEP
- e. All of the above are true

Incorrect (Slide Layer)

39. Which of the following is NOT true regarding thoracic compliance?

- a. Can be subdivided into static and dynamic components
- b. Static measurements
- c. Dynamic pressures
- d. You do not need to consider the PEEP
- e. All of the above are true
1.101 Which of the following do NOT belong in lung compliance?

(Multiple Choice, 10 points, unlimited attempts permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Surfactant deficiency</td>
</tr>
</tbody>
</table>
b. Fibrosis vs. Emphysema

c. Blood and fluid volumes

d. Pneumothorax

X e. They all belong

Feedback when correct:
That's right! You selected the correct response.

Feedback when incorrect:
You did not select the correct response.

Correct (Slide Layer)
1.102 Which of the following do not belong in chest wall compliance?

(Multiple Choice, 10 points, unlimited attempts permitted)
41. Which of the following do not belong in chest wall compliance?

- a. Positioning
- b. Diseases of lung parenchyma
- c. Morbidly obese
- d. Muscle relaxation
- e. Large breast

<table>
<thead>
<tr>
<th>Correct Choice</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Positioning</td>
<td>X</td>
</tr>
<tr>
<td>b. Diseases of lung parenchyma</td>
<td></td>
</tr>
<tr>
<td>c. Morbidly obese</td>
<td></td>
</tr>
<tr>
<td>d. Muscle relaxation</td>
<td></td>
</tr>
<tr>
<td>e. Large breast</td>
<td></td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

41. Which of the following do not belong in chest wall compliance?
   - a. Positioning
   - b. Distance
   - c. Motion
   - d. Met
   - e. Lax

Incorrect (Slide Layer)

41. Which of the following do not belong in chest wall compliance?
   - a. Positioning
   - b. Distance
   - c. Motion
   - d. Met
   - e. Lax

   Incorrect
   You did not select the correct response.
1.103 Untitled Slide

Thank you for completing the educational portion of this module. You must now complete a 16 question graded quiz. You must obtain an 80% or better to pass. You will not be allowed to return to the content once you begin this quiz.

Click Next to continue.

1.104 When you are trying to decipher lung pathology, the most useful way to approach the problem is by separating into problems with...

(Multiple Choice, 10 points, 1 attempt permitted)
1. When you are trying to decipher lung pathology, the most useful way to approach the problem is by separating into problems with...

- a. Egress and Ingress
- b. Oxygenation and Ventilation
- c. Inspiration and Expiration
- d. Active and Passive
- e. Inhalation and Exhalation

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Egress and Ingress</td>
</tr>
<tr>
<td>X</td>
</tr>
<tr>
<td>b. Oxygenation and Ventilation</td>
</tr>
<tr>
<td>c. Inspiration and Expiration</td>
</tr>
<tr>
<td>d. Active and Passive</td>
</tr>
<tr>
<td>e. Inhalation and Exhalation</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.
1.105 Which is true about RQ?

(Multiple Choice, 10 points, 1 attempt permitted)
### Which is true about RQ?

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Stands for Residual Quotient</td>
</tr>
<tr>
<td></td>
<td>b. Compares CO2 consumed to O2 produced</td>
</tr>
<tr>
<td></td>
<td>c. Is based on heart rate</td>
</tr>
<tr>
<td></td>
<td>d. Is part of the Bohr Equation</td>
</tr>
<tr>
<td>X</td>
<td>e. Is impacted by diet and metabolic activity</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
1.106 When is pulse oximetry of limited value for assessing oxygenation?

(Multiple Choice, 10 points, 1 attempt permitted)
Correct Choice

- a. If the patient has a reading less the 80%
- b. If the patient has mitral regurgitation
- c. If the patient is hyperthermic
- d. If the patient is on significant supplemental oxygenation with 100% saturation
- e. If the patient is bradycardic

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.
1.107 Closing capacity...

(Multiple Choice, 10 points, 1 attempt permitted)
4. Closing capacity...

- a. Starts off in life greater than FRC
- b. Does not depend on pulmonary edema
- c. Has a collapsing pressure that is inversely proportional to its radius
- d. Is more likely to collapse if a larger sphere
- e. Is unrelated to body position

Correct Choice

<table>
<thead>
<tr>
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<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td>e. Is unrelated to body position</td>
</tr>
</tbody>
</table>

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.
1.108 Which is true of Functional Residual Capacity?

(Multiple Choice, 10 points, 1 attempt permitted)
5. Which is true of Functional Residual Capacity?

- a. Made up of Expiratory Reserve Volume and Residual Volume
- b. Stays constant through life
- c. Is always greater than closing capacity
- d. A balance of forces between the thoracic and abdominal cavity
- e. Typically 10-20cc per kilogram

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>a. Made up of Expiratory Reserve Volume and Residual Volume</td>
</tr>
<tr>
<td></td>
<td>b. Stays constant through life</td>
</tr>
<tr>
<td></td>
<td>c. Is always greater than closing capacity</td>
</tr>
<tr>
<td></td>
<td>d. A balance of forces between the thoracic and abdominal cavity</td>
</tr>
<tr>
<td></td>
<td>e. Typically 10-20cc per kilogram</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
1.109 Which of the following is a reason that a person might require intubation?

(Multiple Choice, 10 points, 1 attempt permitted)
6. Which of the following is a reason that a person might require intubation?

- a. Migraine
- b. Sleep deprivation
- c. Miscommunication
- d. Tension pneumothorax
- e. Need for chest xray

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Migraine</td>
</tr>
<tr>
<td></td>
<td>b. Sleep deprivation</td>
</tr>
<tr>
<td></td>
<td>c. Miscommunication</td>
</tr>
<tr>
<td>X</td>
<td>d. Tension pneumothorax</td>
</tr>
<tr>
<td></td>
<td>e. Need for chest xray</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
1.110 In Ventilation / Perfusion matching, a shunt refers to...

(Multiple Choice, 10 points, 2 attempts permitted)
7. In Ventilation / Perfusion matching, a shunt refers to...

- a. Areas perfused but not ventilated
- b. Areas with atelectasis
- c. A pathology not easily treated with increasing FiO2
- d. States that can be either intracardiac or extracardiac
- e. All of the above

<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Areas perfused but not ventilated</td>
</tr>
<tr>
<td></td>
<td>b. Areas with atelectasis</td>
</tr>
<tr>
<td></td>
<td>c. A pathology not easily treated with increasing FiO2</td>
</tr>
<tr>
<td></td>
<td>d. States that can be either intracardiac or extracardiac</td>
</tr>
<tr>
<td>X</td>
<td>e. All of the above</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.
Correct (Slide Layer)

7. In Ventilation / Perfusion matching, a shunt refers to...
   - a. Areas perfused but not ventilated
   - b. Areas ventilated but not perfused
   - c. A process involving the transfer of TiO2
   - d. Stenosis of the cardiac
   - e. Altered 

   Correct
   That's right! You selected the correct response.

   Continue

Incorrect (Slide Layer)

7. In Ventilation / Perfusion matching, a shunt refers to...
   - a. Areas perfused but not ventilated
   - b. Areas ventilated but not perfused
   - c. A process involving the transfer of TiO2
   - d. Stenosis of the cardiac
   - e. Altered 

   Incorrect
   You did not select the correct response.

   Continue
1.111 Which is NOT true regarding Dead Space?

(Multiple Choice, 10 points, 1 attempt permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Lung areas that are ventilated but not perfused</td>
</tr>
</tbody>
</table>
b. Can develop in massive acute blood loss

c. Can be responsive to supplemental oxygen

d. Refers to V/Q ratios greater than zero

e. None of the above are true

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
1.112 Which of the following is NOT true of pulmonary shunt?

(Multiple Choice, 10 points, 1 attempt permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>a.</strong> Normal shunt is 2-5% of pulmonary blood flow</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>b.</td>
<td>Normally involves the Bronchial Veins</td>
</tr>
<tr>
<td>X</td>
<td>c. Shunt 30% or less is easily tolerated</td>
</tr>
<tr>
<td></td>
<td>d. Shunt increases with age</td>
</tr>
<tr>
<td></td>
<td>e. Normally involves the Thesbian Veins</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

9. Which of the following is NOT true of pulmonary shunt?

- a. Normal shunt is 2-5% of pulmonary blood flow
- b. Normally involves the Bronchial Veins
- c. Shunt 30% or less is easily tolerated
- d. Shunt increases with age
- e. Normally involves the Thesbian Veins

[Correct feedback]

That's right! You selected the correct response.

[Continue button]
Incorrect (Slide Layer)

9. Which of the following is NOT true of pulmonary shunt?
   - a. Normal shunt is 2-5% of pulmonary blood flow
   - b. Normal shunt occurs in the lungs
   - c. Shunt flow is increased in disease states
   - d. Shunt flow is decreased in disease states
   - e. Normal shunt flow is 10% of pulmonary blood flow

   Incorrect.
   You did not select the correct response.

Continue

1.113 In Assist-Controlled Ventilation, which of the following is true?

(Multiple Choice, 10 points, 1 attempt permitted)

10. In Assist-Controlled Ventilation, which of the following is true?
   - a. The patient receives at least the preset tidal volume and respiratory rate
   - b. Additional patient effort results in additional breaths
   - c. This mode of ventilation leads to increased Work of Breathing
   - d. The patient influences respiratory rate
   - e. All of the above are true
10. In Assist-Controlled Ventilation, which of the following is true?

- a. The patient receives at least the preset tidal volume and respiratory rate
- b. Additional patient effort results in additional breaths
- c. This mode of ventilation leads to increased Work of Breathing
- d. The patient influences respiratory rate
- e. All of the above are true

**Feedback when correct:**
That's right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.
1.114 Regarding Pressure Controlled ventilation, which of the following is false?

(Multiple Choice, 10 points, 1 attempt permitted)
<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. The provider selects the desired respiratory rate and pressure</td>
</tr>
<tr>
<td></td>
<td>b. The patient can receive different tidal volumes for each breath</td>
</tr>
<tr>
<td></td>
<td>c. The patient may accidentally hypoventilate or hyperventilate</td>
</tr>
<tr>
<td>X</td>
<td>d. The delivered tidal volume never changes</td>
</tr>
<tr>
<td></td>
<td>e. The selected pressure results in different tidal volumes for different people</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That’s right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**
1.115 What is NOT true about Auto-PEEP?

(Multiple Choice, 10 points, 1 attempt permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Is also called “breath-stacking”</td>
</tr>
</tbody>
</table>
b. Can disrupt hemodynamics

c. Can cause barotrauma

d. Is most common in Assist Control Ventilation

X e. All are true

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**
1.116 Which is NOT true regarding SIMV?

(Multiple Choice, 10 points, 1 attempt permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stands for Synchronized Intermittent Mandatory Ventilation</td>
<td></td>
</tr>
</tbody>
</table>

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<table>
<thead>
<tr>
<th></th>
<th>b. Does not allow for spontaneous breaths by the patient</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>c. Attempts to synchronize mandatory breaths with spontaneous efforts</td>
</tr>
<tr>
<td></td>
<td>d. Provider selects baseline tidal volume and respiratory rate</td>
</tr>
<tr>
<td></td>
<td>e. All of the above are true</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

13. *Which is NOT true regarding SIMV?*

- a. Stands for Synchronized Intermittent Mandatory Ventilation
- b. Does not allow for spontaneous breaths by the patient
- c. Attempts to synchronize mandatory breaths with spontaneous efforts
- d. Provider selects baseline tidal volume and respiratory rate
- e. All of the above are true

[Correct]

That's right! You selected the correct response.

[Continue]
1.117 Which of the following is true about Pressure Support Ventilation?

(Multiple Choice, 10 points, 1 attempt permitted)
<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. The patient triggers some of the breaths</td>
</tr>
<tr>
<td>X b. The provider can change the pressure support to varying tidal volume</td>
</tr>
<tr>
<td>c. Tidal volume sizes are guaranteed</td>
</tr>
<tr>
<td>d. Is never used to liberate the patient from the ventilator</td>
</tr>
<tr>
<td>e. All of the above are false</td>
</tr>
</tbody>
</table>

**Feedback when correct:**
That’s right! You selected the correct response.

**Feedback when incorrect:**
You did not select the correct response.

**Correct (Slide Layer)**

14. Which of the following is true about Pressure Support Ventilation?

- a. The patient triggers some of the breaths
- b. The provider can change the pressure support to varying tidal volume
- c. Tidal volume sizes are guaranteed
- d. Is never used to liberate the patient from the ventilator
- e. All of the above are false

Correct

That's right! You selected the correct response.

Continue
1.118 Which of the following is true of PEEP?

(Multiple Choice, 10 points, 1 attempt permitted)

<table>
<thead>
<tr>
<th>Correct Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stands for Positive End-Expiratory Pressure</td>
</tr>
</tbody>
</table>
b. Is utilized to improve oxygenation

c. Excessive amounts can affect hemodynamics

d. Could create West Zone 1 in the lungs

e. All of the above are true

Feedback when correct:

That's right! You selected the correct response.

Feedback when incorrect:

You did not select the correct response.

Correct (Slide Layer)
1.119 The difference between the Peak Airway Pressure and the Plateau Pressure...

(Multiple Choice, 10 points, 1 attempt permitted)
<table>
<thead>
<tr>
<th>Correct</th>
<th>Choice</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>a. Depends on the elastance of the lung parenchyma</td>
</tr>
<tr>
<td></td>
<td>b. Reflects the compliance of the lungs</td>
</tr>
<tr>
<td>X</td>
<td>c. Depends on the resistance in the airways</td>
</tr>
<tr>
<td></td>
<td>d. Does not take into consideration bronchial secretions or mucous plugs</td>
</tr>
<tr>
<td></td>
<td>e. All of the above are true</td>
</tr>
</tbody>
</table>

**Feedback when correct:**

That's right! You selected the correct response.

**Feedback when incorrect:**

You did not select the correct response.

**Correct (Slide Layer)**

16. The difference between the Peak Airway Pressure and the Plateau Pressure...

- a. Depends on the elastance of the lung parenchyma
- b. Reflects the compliance of the lungs
- X c. Depends on the resistance in the airways
- d. Does not take into consideration bronchial secretions or mucous plugs
- e. All of the above are true

[Image of feedback slide]
Incorrect (Slide Layer)

16. The difference between the Peak Airway Pressure and the Plateau Pressure...
   - a. Depends on the elastance of the lung parenchyma
   - b. Respiration
   - c. Depression or elevation
   - d. Does not affect the alveolocapillary membrane
   - e. All of the above are true

1.120 Results Slide

(Results Slide, 0 points, 1 attempt permitted)
<table>
<thead>
<tr>
<th>Question Number</th>
<th>Question</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.104</td>
<td>When you are trying to decipher lung pathology, the most useful way to approach the problem is by separating into problems with...</td>
</tr>
<tr>
<td>1.105</td>
<td>Which is true about RQ?</td>
</tr>
<tr>
<td>1.106</td>
<td>When is pulse oximetry of limited value for assessing oxygenation?</td>
</tr>
<tr>
<td>1.107</td>
<td>Closing capacity...</td>
</tr>
<tr>
<td>1.108</td>
<td>Which is true of Functional Residual Capacity?</td>
</tr>
<tr>
<td>1.109</td>
<td>Which of the following is a reason that a person might require intubation?</td>
</tr>
<tr>
<td>1.110</td>
<td>In Ventilation / Perfusion matching, a shunt refers to...</td>
</tr>
<tr>
<td>1.111</td>
<td>Which is NOT true regarding Dead Space?</td>
</tr>
<tr>
<td>1.112</td>
<td>Which of the following is NOT true of pulmonary shunt?</td>
</tr>
<tr>
<td>1.113</td>
<td>In Assist-Controlled Ventilation, which of the following is true?</td>
</tr>
<tr>
<td>1.114</td>
<td>Regarding Pressure Controlled ventilation, which of the following is false?</td>
</tr>
<tr>
<td>1.115</td>
<td>What is NOT true about Auto-PEEP?</td>
</tr>
<tr>
<td>1.116</td>
<td>Which is NOT true regarding SIMV?</td>
</tr>
<tr>
<td>1.117</td>
<td>Which of the following is true about Pressure Support Ventilation?</td>
</tr>
<tr>
<td>1.118</td>
<td>Which of the following is true of PEEP?</td>
</tr>
<tr>
<td>1.119</td>
<td>The difference between the Peak Airway Pressure and the Plateau Pressure...</td>
</tr>
</tbody>
</table>
Result slide properties

Passing Score 80%

Success (Slide Layer)

Results

Your Score: 80% (Correct response out of points)

Passing Score: 80% (Correct response out of points)

Result: Congratulations, you passed.

Retry Quiz Exit Module
Failure (Slide Layer)

Results

Your Score:

Passing Score:

Result:

❌ You did not pass.

Retry Quiz  Exit Module