

Advanced Pulmonary Function Testing (PFT) Practice Test (Sample)

Study Guide



Everything you need from our exam experts!

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Introduction

Preparing for a certification exam can feel overwhelming, but with the right tools, it becomes an opportunity to build confidence, sharpen your skills, and move one step closer to your goals. At Examzify, we believe that effective exam preparation isn't just about memorization, it's about understanding the material, identifying knowledge gaps, and building the test-taking strategies that lead to success.

This guide was designed to help you do exactly that.

Whether you're preparing for a licensing exam, professional certification, or entry-level qualification, this book offers structured practice to reinforce key concepts. You'll find a wide range of multiple-choice questions, each followed by clear explanations to help you understand not just the right answer, but why it's correct.

The content in this guide is based on real-world exam objectives and aligned with the types of questions and topics commonly found on official tests. It's ideal for learners who want to:

- Practice answering questions under realistic conditions,
- Improve accuracy and speed,
- Review explanations to strengthen weak areas, and
- Approach the exam with greater confidence.

We recommend using this book not as a stand-alone study tool, but alongside other resources like flashcards, textbooks, or hands-on training. For best results, we recommend working through each question, reflecting on the explanation provided, and revisiting the topics that challenge you most.

Remember: successful test preparation isn't about getting every question right the first time, it's about learning from your mistakes and improving over time. Stay focused, trust the process, and know that every page you turn brings you closer to success.

Let's begin.

How to Use This Guide

This guide is designed to help you study more effectively and approach your exam with confidence. Whether you're reviewing for the first time or doing a final refresh, here's how to get the most out of your Examzify study guide:

1. Start with a Diagnostic Review

Skim through the questions to get a sense of what you know and what you need to focus on. Your goal is to identify knowledge gaps early.

2. Study in Short, Focused Sessions

Break your study time into manageable blocks (e.g. 30 - 45 minutes). Review a handful of questions, reflect on the explanations.

3. Learn from the Explanations

After answering a question, always read the explanation, even if you got it right. It reinforces key points, corrects misunderstandings, and teaches subtle distinctions between similar answers.

4. Track Your Progress

Use bookmarks or notes (if reading digitally) to mark difficult questions. Revisit these regularly and track improvements over time.

5. Simulate the Real Exam

Once you're comfortable, try taking a full set of questions without pausing. Set a timer and simulate test-day conditions to build confidence and time management skills.

6. Repeat and Review

Don't just study once, repetition builds retention. Re-attempt questions after a few days and revisit explanations to reinforce learning. Pair this guide with other Examzify tools like flashcards, and digital practice tests to strengthen your preparation across formats.

There's no single right way to study, but consistent, thoughtful effort always wins. Use this guide flexibly, adapt the tips above to fit your pace and learning style. You've got this!

Questions

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- 1. Whose gas law is foundational in the technique of plethysmography?**
 - A. Charles' Law**
 - B. Dalton's Law**
 - C. Boyle's Law**
 - D. Henry's Law**
- 2. Which specialty gas is used for DLCO testing due to its high bonding ability with hemoglobin?**
 - A. Oxygen**
 - B. Nitrogen**
 - C. Helium**
 - D. Carbon monoxide**
- 3. What is a significant clinical limitation of simple spirometry?**
 - A. It is too expensive**
 - B. It cannot measure all lung volumes and capacity**
 - C. It requires a specialist to interpret**
 - D. It can only assess tidal volume**
- 4. When is a lung volume measurement typically used in patients?**
 - A. During a routine check-up**
 - B. To assess for tuberculosis**
 - C. When differentiating between obstructive and restrictive lung disease patterns**
 - D. To measure oxygen saturation**
- 5. What factors can affect the outcome of a DLCO test?**
 - A. Age and gender**
 - B. Anemia and smoking**
 - C. Height and weight**
 - D. Altitude and temperature**

6. Which of the following is an example of a restrictive lung disease?

- A. Chronic bronchitis**
- B. Asthma**
- C. Pulmonary fibrosis**
- D. Emphysema**

7. Which condition is commonly associated with obstructive lung defects in pulmonary function tests?

- A. Asthma**
- B. Chronic Obstructive Pulmonary Disease (COPD)**
- C. Pneumonia**
- D. Interstitial Lung Disease**

8. Which of the following is likely to be used in a spirometry test?

- A. Measurement of blood gases**
- B. Assessment of airway inflammation**
- C. Measurement of air volume and flow rates**
- D. Peak flow monitoring**

9. What effect does obesity have on pulmonary function test results?

- A. It can cause increased lung volumes**
- B. It can cause a restrictive pattern with decreased lung volumes**
- C. It typically shows normal test results**
- D. It primarily affects airway resistance**

10. What does a significant bronchodilator response usually indicate?

- A. Elite athletic performance**
- B. Reversible airway obstruction**
- C. Pulmonary fibrosis**
- D. Severe restrictive disease**

Answers

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1. C
2. D
3. B
4. C
5. B
6. C
7. B
8. C
9. B
10. B

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Explanations

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1. Whose gas law is foundational in the technique of plethysmography?

- A. Charles' Law**
- B. Dalton's Law**
- C. Boyle's Law**
- D. Henry's Law**

The foundational gas law in the technique of plethysmography is Boyle's Law. This law states that, at constant temperature, the pressure and volume of a gas are inversely related. In other words, if the volume of a gas decreases, its pressure increases, and vice versa, provided the temperature remains constant. In plethysmography, the measurement of lung volume relies on the principles outlined by Boyle's Law. During the procedure, changes in pressure within a closed system (such as the plethysmograph) can be measured as a subject breathes in and out. This enables the determination of lung volumes and capacities based on observed pressure changes. In contrast, the other gas laws mentioned focus on different aspects of gas behavior. Charles' Law relates to the volume and temperature of a gas, Dalton's Law deals with the partial pressures of gases in a mixture, and Henry's Law pertains to the solubility of gases in liquids. While each of these laws is fundamental to understanding gas behavior in various contexts, it is Boyle's Law that is specifically applicable to the operation and interpretation of plethysmography.

2. Which specialty gas is used for DLCO testing due to its high bonding ability with hemoglobin?

- A. Oxygen**
- B. Nitrogen**
- C. Helium**
- D. Carbon monoxide**

For Diffusing Capacity of the Lung for Carbon Monoxide (DLCO) testing, carbon monoxide is the specialized gas used because of its strong affinity for hemoglobin. When carbon monoxide is inhaled during the test, it binds to hemoglobin approximately 210 times more effectively than oxygen. This high binding affinity allows for a more sensitive measure of how well gases are transferred from the lungs to the blood, making it an ideal choice for assessing pulmonary function. The use of carbon monoxide enables clinicians to evaluate both the surface area available for gas exchange and the integrity of the alveolar-capillary membrane. During the test, the amount of carbon monoxide that passes from the alveoli into the bloodstream over a specific time can indicate any issues with diffusion capacity, which can be critical for diagnosing various pulmonary conditions. In contrast, the other gases listed do not possess the same properties or functions. Oxygen does bind to hemoglobin but is not used in the test specifically designed for diffusion capacity because it does not provide the same diagnostic information regarding the lung's ability to transfer gases effectively. Nitrogen is an inert gas and does not react with hemoglobin, thus failing to help evaluate pulmonary function. Helium is also not suitable as it does not bond with hemoglobin and is primarily

3. What is a significant clinical limitation of simple spirometry?

- A. It is too expensive
- B. It cannot measure all lung volumes and capacity**
- C. It requires a specialist to interpret
- D. It can only assess tidal volume

The significant clinical limitation of simple spirometry is that it cannot measure all lung volumes and capacities. Spirometry primarily assesses the dynamics of airflow during breathing, specifically measuring parameters like forced vital capacity (FVC) and forced expiratory volume in one second (FEV1). However, it does not provide information on residual volume (RV), total lung capacity (TLC), or functional residual capacity (FRC). These lung volumes are important for a comprehensive understanding of pulmonary function and can be critical in diagnosing and managing various respiratory conditions. Other pulmonary function tests, such as body plethysmography or gas dilution methods, are necessary to obtain complete information about lung volumes and capacities. As a result, while simple spirometry is valuable for evaluating airflow limitations, its inability to measure all lung volumes represents a notable limitation in clinical practice, especially when more detailed assessments of lung mechanics are required.

4. When is a lung volume measurement typically used in patients?

- A. During a routine check-up
- B. To assess for tuberculosis
- C. When differentiating between obstructive and restrictive lung disease patterns**
- D. To measure oxygen saturation

Lung volume measurements are particularly valuable when differentiating between obstructive and restrictive lung disease patterns. This is because these conditions result in distinct patterns of lung volumes and capacities. In obstructive lung diseases, such as asthma or COPD, patients typically experience an increase in total lung capacity due to hyperinflation, but a decrease in forced expiratory volume in one second (FEV1) relative to forced vital capacity (FVC), leading to a reduced FEV1/FVC ratio. Conversely, in restrictive lung diseases, like pulmonary fibrosis or sarcoidosis, there is a reduction in total lung capacity alongside a reduction in both FEV1 and FVC, but the FEV1/FVC ratio often remains normal or can be increased. Thus, the interpretation of lung volume measurements helps to establish the type of lung disease present, guiding appropriate treatment and management. This clinical utility makes it a fundamental aspect of pulmonary function testing in assessing respiratory health.

5. What factors can affect the outcome of a DLCO test?

- A. Age and gender
- B. Anemia and smoking**
- C. Height and weight
- D. Altitude and temperature

The outcome of a DLCO (Diffusing Capacity for Carbon Monoxide) test can be significantly influenced by various physiological and environmental factors. Anemia, for example, can affect the amount of hemoglobin available to bind carbon monoxide, potentially leading to an artificially low DLCO value due to decreased oxygen-carrying capacity of the blood. Similarly, smoking can impact lung function and alter the mechanics of gas exchange, as well as increase carbon monoxide levels in the blood, which directly affects the diffusing capacity readings. Together, these factors make anemia and smoking highly relevant when considering the DLCO test results and their implications for lung health. By recognizing the impact of these factors, healthcare providers can better interpret DLCO values and assess respiratory function more accurately in various patient populations.

6. Which of the following is an example of a restrictive lung disease?

- A. Chronic bronchitis
- B. Asthma
- C. Pulmonary fibrosis**
- D. Emphysema

Restrictive lung diseases are characterized by a reduction in lung volumes, which translates to a decrease in the ability of the lungs to expand fully. This can occur due to various factors, including lung tissue scarring or stiffness, which hampers expansion during inhalation. Pulmonary fibrosis exemplifies this category, as it involves the thickening and stiffening of lung tissue, resulting in reduced compliance and limited lung expansion. This manifests in a decreased total lung capacity (TLC) and forced vital capacity (FVC), which are classic indicators of restrictive lung disease. The underlying scar tissue in pulmonary fibrosis restricts the flow of oxygen into the bloodstream and compromises respiratory mechanics. In contrast, chronic bronchitis, asthma, and emphysema fall under obstructive lung diseases. These conditions primarily affect the ability to exhale air from the lungs rather than inhaling. In obstructive diseases, there is typically an increase in airway resistance, leading to airflow limitation during expiration, while lung volumes may remain normal or even increased in some cases. In summary, pulmonary fibrosis vividly illustrates the defining characteristics of restrictive lung disease, aligning with diminished lung capacity and compromised lung expansion.

7. Which condition is commonly associated with obstructive lung defects in pulmonary function tests?

- A. Asthma**
- B. Chronic Obstructive Pulmonary Disease (COPD)**
- C. Pneumonia**
- D. Interstitial Lung Disease**

Chronic Obstructive Pulmonary Disease (COPD) is a condition that is classically associated with obstructive lung defects as observed in pulmonary function tests (PFTs). In COPD, there is a significant limitation of airflow due to the narrowing of airways, which results in a decrease in the forced expiratory volume in one second (FEV1) relative to the forced vital capacity (FVC). This leads to a characteristic obstructive pattern, highlighted by a reduced FEV1/FVC ratio. While asthma also causes obstructive defects, the primary focus in this question is on defining chronic conditions, and COPD is specifically recognized as a progressive and chronic disease that leads to persistent airflow limitation. Conditions like pneumonia and interstitial lung disease typically manifest restrictive lung patterns rather than obstructive. Pneumonia may cause transient obstructive features due to mucus secretions and inflammation, but it does not produce the chronic changes seen in COPD. Interstitial lung disease, on the other hand, is characterized by inflammation and scarring of lung tissue, resulting in a restricted breathing pattern rather than obstructive. Thus, in the context of chronic obstructive lung defects, COPD clearly stands out as the principal condition associated with significant airway obstruction in pulmonary function tests

8. Which of the following is likely to be used in a spirometry test?

- A. Measurement of blood gases**
- B. Assessment of airway inflammation**
- C. Measurement of air volume and flow rates**
- D. Peak flow monitoring**

In a spirometry test, the primary focus is on the measurement of air volume and flow rates. This involves determining how much air a person can inhale and exhale, and the speed at which these actions occur. The results are crucial for diagnosing and assessing various lung conditions such as asthma, chronic obstructive pulmonary disease (COPD), and restrictive lung diseases. Spirometry specifically quantifies lung function by measuring parameters such as Forced Vital Capacity (FVC) and Forced Expiratory Volume in one second (FEV1). These measurements help in calculating ratios such as FEV1/FVC, which are essential in differentiating between obstructive and restrictive patterns of lung disease. Other options, while relevant to pulmonary function, do not directly involve the core objective of spirometry. Blood gas measurements reflect oxygen and carbon dioxide levels, which are different tests usually conducted separately to assess respiratory effectiveness. Assessment of airway inflammation typically involves different modalities such as bronchoscopy or specific biomarkers, rather than simple volume and flow rate measurements. Peak flow monitoring, while useful in managing respiratory conditions, is a different assessment tool focused primarily on measuring peak expiratory flow rate, rather than the comprehensive analysis provided by spirometry.

9. What effect does obesity have on pulmonary function test results?

- A. It can cause increased lung volumes
- B. It can cause a restrictive pattern with decreased lung volumes**
- C. It typically shows normal test results
- D. It primarily affects airway resistance

Obesity has a significant impact on pulmonary function tests, primarily contributing to a restrictive pattern characterized by decreased lung volumes. This occurs because excess body weight can restrict the diaphragm and thoracic cage movement, limiting lung expansion. As a result, patients with obesity often present with reduced inspiratory capacity, total lung capacity, and forced vital capacity on pulmonary function tests. The restrictive pattern arises because the limitation in lung expansion leads to a reduced amount of air that can be inhaled, rather than affecting the airflow limitation typically seen in obstructive lung diseases. Therefore, decreased lung volumes are expected findings in individuals with obesity during pulmonary function testing. In contrast, options suggesting increased lung volumes or typical normal results do not accurately reflect the physiological limitations imposed by obesity on lung function. Furthermore, while obesity may influence airway resistance to some degree, the most pronounced effect is the reduction in lung volumes, hence the restrictive spirometric pattern is the key aspect associated with obesity in pulmonary function tests.

10. What does a significant bronchodilator response usually indicate?

- A. Elite athletic performance
- B. Reversible airway obstruction**
- C. Pulmonary fibrosis
- D. Severe restrictive disease

A significant bronchodilator response typically indicates reversible airway obstruction, which is often seen in conditions like asthma or chronic obstructive pulmonary disease (COPD). This response occurs when the bronchodilator medication relaxes the smooth muscles surrounding the airways, leading to an improvement in airflow and a decrease in obstruction. In clinical practice, evaluating the bronchodilator response involves measuring lung function before and after administering a bronchodilator. A notable increase in measures such as Forced Expiratory Volume in 1 second (FEV1) points to underlying reversible pathology, suggesting that the airway obstruction is not permanent and can be alleviated with medication. In contrast, conditions such as pulmonary fibrosis and severe restrictive disease generally do not exhibit a significant bronchodilator response, as they involve structural changes in the lung tissue or mechanical restrictions that don't respond to bronchodilators. Elite athletic performance is also not associated with bronchodilator response, as it relates primarily to fitness levels rather than respiratory mechanics or pathology.

Next Steps

Congratulations on reaching the final section of this guide. You've taken a meaningful step toward passing your certification exam and advancing your career.

As you continue preparing, remember that consistent practice, review, and self-reflection are key to success. Make time to revisit difficult topics, simulate exam conditions, and track your progress along the way.

If you need help, have suggestions, or want to share feedback, we'd love to hear from you. Reach out to our team at hello@examzify.com.

Or visit your dedicated course page for more study tools and resources:

<https://advancedpft.examzify.com>

We wish you the very best on your exam journey. You've got this!

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