Considering Taking the CPFT/RPFT Exam?
PFT Exam Summary—Questions, Answers, Explanations & More

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Egan' Fundamentals of Respiratory Care

The Comprehensive Respiratory Therapy Exam Preparation Guide

Disclaimer

- Though I am an item writer for the NBRC, I have not prepared this presentation with any material which is restricted by the NBRC. The information presented from the NBRC is publicly available and the questions included in this presentation are similar to, but are **not** actual questions used in their credentialing exams.

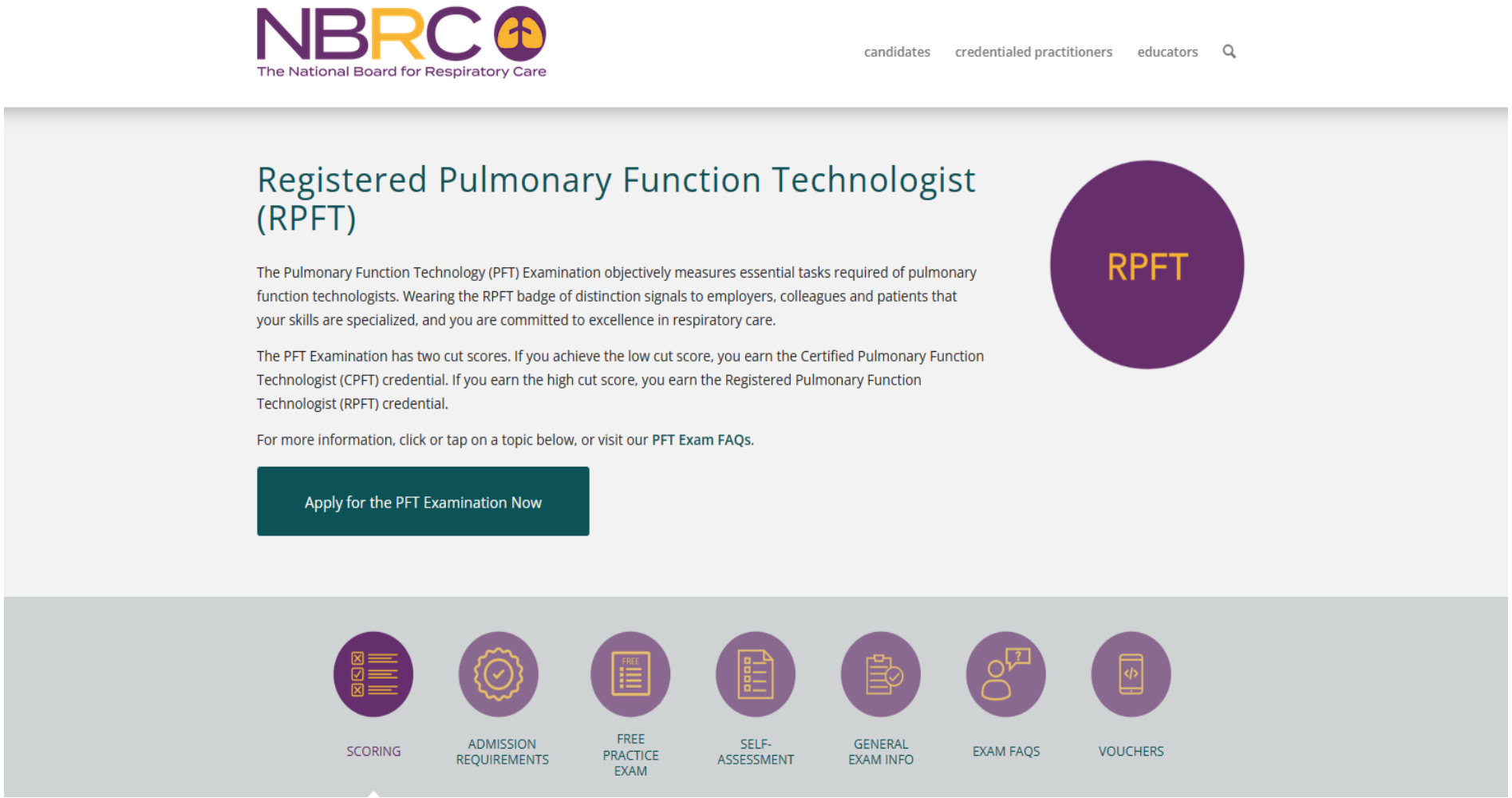
Learning Objectives:

- Examine the ***rationale for pursuing the CPFT/RPFT.***
- Review ***key resources*** available from the NBRC.
- Examine sample questions, answers and explanations.
- Describe how to prepare for the exam(s).
- Review test taking strategies.
- Provide Some Key Resources.

Why Seek the CPFT and RPFT Credential?

- Knowledge empowers people.
- Knowledge can be obtained from education and credentials.
- The CPFT and RPFT are two such credentials which can help empower you.
- Your career opportunities can be expanded and respect from your peers enhanced.

NBRC PFT Exam Resources: https://www.nbrc.org/examinations/rpft/



CPFT/RPFT Exam Matrix (Excerpt)

The Complete Matrix Can be Found at: https://www.nbrc.org/wp-content/uploads/2022/03/PFT-Detailed-Content-Outline-EXTERNAL.pdf

Pulmonary Function Technology Examination Detailed Content Outline *Multiple-choice items are linked to open cells.*	Cognitive Level			Totals
	Recall	Application	Analysis	
I. INSTRUMENTATION / EQUIPMENT	10	17	6	33
A. Set Up, Maintain, Calibrate	4	4	2	10
1. Body habitus equipment (for example, stadiometer, body weight scale, caliper)				
2. Blood gas analyzers				
3. Spirometers				
4. Aerosol delivery devices (for example, nebulizers, dosimeters)				
5. Metered dose or dry powder inhalers				
6. Valves (for example, directional, demand)				
7. Gas analyzers (for example, nitrogen, helium, oxygen, methane, CO)				
8. Body plethysmographs				
9. Exercise equipment (for example, treadmill, cycle ergometer)				
10. Field walking test equipment (for example, 6MWT, shuttle walk test)				
11. ECG monitors				
12. Gas delivery systems (for example, blenders, flowmeters)				
13. Pressure measuring devices (for example, manometers, transducers)				
14. Gas and water absorbers (for example, Drierite®, Nafion™, Perma Pure tubing)				
15. Emergency management equipment (for example, defibrillator, crash cart)				
16. Arterial / venous blood collection equipment				
17. Quality control devices (for example, calibration syringes, manometers, isothermal lung analog)				
18. Infection control materials / methods (for example, wipes, PPE, sterilization devices, filters)				

Review the Exam Matrix for More Challenging Facets of the Exam

- Interpreting Results
- Parameters for Acceptable Results
- ATS Parameters for Test Acceptability
- Quality Control

Question 1: A patient has a peak expiratory flow rate (PEFR) of 5.2 L/sec before bronchodilator treatment and 6.3 L/sec after treatment. What percent change in PEFR occurred?

- Answer Choices:

- A. 8%
- B. 17%
- C. 21%
- D. 26%

Correct Answer: C

Explanation: % change = [(post – pre) / pre] × 100

% change = [(6.3 – 5.2) / 5.2] × 100 = 21%.

Question 2: A doctor asks you to provide serial measures of the respiratory muscle strength of a patient with a progressive acute neuromuscular disorder. Which of the following measures would you select to provide the needed information?

- A. forced vital capacity
- B. arterial blood gas results
- C. rapid shallow breathing index
- D. maximum voluntary ventilation

Correct Answer: A

Explanation: Of the measures listed, only the forced vital capacity provides information primarily on the patient's respiratory muscle strength. Since the forced vital capacity includes both a maximum inspiratory and expiratory effort, it provides an overall picture of the strength of both these muscle groups. Were separate information needed on either the inspiratory or expiratory muscles alone, a maximum inspiratory (MIP) or maximum expiratory pressure (MEP) could be measured instead.

Question 3: After bedside measurement, you note that a patient's slow and forced vital capacity are approximately equal and both are less than 60% of the predicted values. Which of the following diagnoses is LEAST likely?

- A. lung resection
- B. interstitial fibrosis
- C. myasthenia gravis
- D. COPD

Answer: D

Explanation: If the slow vital capacity is low, a restrictive disorder is likely present, e.g., interstitial fibrosis, lung resection, consolidative processes, congestive heart failure, obesity, and neuromuscular disorders such as myasthenia gravis. In these patients the slow VC and FVC will not usually differ significantly. If the FVC is substantially less that the slow vital capacity, air trapping is likely present, signifying obstructive lung disease.

Question 4: As compared to predicted normals, a patient has a normal FEV1%, normal FEF25-75, but a markedly reduced FVC. Test results are repeatable. Which of the following is the most likely underlying problem?

- A. poor patient effort during the test procedure
- B. a restrictive disorder of the lungs or chest wall
- C. combined restrictive and obstructive disease
- D. peripheral (small) airway obstruction

Answer: B

Explanation: In the presence of normal expiratory flow parameters (such as the FEV1% and FEF25-75), a reduced FVC indicates a restrictive disorder of the lungs or chest wall.

Question 5: As measured by the single breath DLco method, the diffusing capacity of the lungs would be decreased in which one of the following cases?

- A. pulmonary hypertension
- B. secondary polycythemia
- C. strenuous exercise
- D. pulmonary emphysema

Answer: D

Explanation: The DLco is low in conditions that actually impair membrane diffusion (as in pulmonary fibrosis) or decrease surface area (as in emphysema). The DLco can also be less than normal with reduced Hb (as in anemia), decreased pulmonary capillary blood flow, or decreased alveolar volume. Increases in DLco occur with increased Hb (as in secondary polycythemia), increased pulmonary blood flow, increased alveolar volume, and during exercise.

Question 6: In reviewing a patient's chart you note a history of COPD and a Body Mass Index (BMI) of 15. Which of the following tests would you recommend?

- A. polysomnography
- B. exercise stress test
- C. metabolic study
- D. bronchoscopy

Answer: C

Explanation: With a BMI of 15, this patient is severely malnourished. That alone is an indication for measurement of his metabolic parameters (VO2, VCO2, RE, REE) via indirect calorimetry. Add to that COPD--in which the O2 cost of breathing can be very high and excessive carbohydrates can increase ventilatory demand--and the need for a metabolic assessment is apparent. Other clinical situations in which IC studies may be indicated include severe sepsis, multiple trauma, burns, hyper- or hypometabolic states, mechanical ventilation weaning difficulties, and whenever a patient's response to nutritional support is inadequate.

Question 7: Which of the following tests would you recommend in order to identify the cause of dyspnea and factors limiting a patient's exercise tolerance?

- A. 6-minute walking distance
- B. overnight oximetry assessment
- C. peak expiratory flow rate
- D. comprehensive exercise test

Answer: D

Explanation: To identify the cause of dyspnea and factors limiting a patient's exercise tolerance, you would need to conduct a comprehensive cardiopulmonary exercise test. The 6-minute walk test only evaluates how well the body as a whole responds to exertion. Its use therefore is limited to determining overall functional capacity or changes in capacity due therapy.

Question 8: A pulmonologist asks you to assess airway responsiveness during a pulmonary function exam. He wants to rule out asthma from chronic bronchitis in a patient complaining of nocturnal wheezing. Which of the following test should you recommend?

- A. bronchoprovocation test
- B. cardiopulmonary stress test
- C. nitrogen washout challenge
- D. thoracic gas volume

Answer: A

Explanation: Tests that are indicated to assess for the presence and the degree of airway responsiveness include bronchoprovocation studies (methacholine or histamine challenge) and expired nitric oxide (FeNO) analysis. They are also indicated to screen individuals who may be at risk from environmental or occupational exposure to allergens.

Question 9: Which of the following is the best test for assessing the degree of reversible bronchospasm in an asthmatic patient?

- A. nitrogen washout
- B. spirometry before and after bronchodilation
- C. maximal voluntary ventilation
- D. maximum inspiratory and expiratory force

- Answer: B

Explanation: The only test that will give you a picture of how well a bronchodilator treatment works is FVC spirometry before and after bronchodilation. An increase of at least 12-15% in the FEV1 after bronchodilator is used as the threshold to indicate reversibility.

Question 10: Which of the following would provide the best bedside assessment of the need for ventilatory assistance in a patient with myasthenia gravis?

- A. functional residual capacity
- B. vital capacity
- C. closing volume
- D. total lung capacity

Answer: B

Explanation: Myasthenia gravis is a neuromuscular disease that affects muscle strength. Of the tests listed, the vital capacity requires the most muscular effort from the patient and would be the first of the listed tests to decrease in a neuromuscular disorder.

Question 11: According to ATS recommendations, diagnostic spirometers should be calibrated to within which of the following?

- A. ± 1% or 10 mL, whichever is greater
- B. ± 3% or 50 mL, whichever is greater
- C. ± 5% or 100 mL, whichever is greater
- D. ± 10% or 500 mL, whichever is greater

Answer: B

Explanation: American Thoracic Society (ATS) recommendations for diagnostic spirometers are that calibration checks should be within ± 3% or 50 mL, whichever is larger.

Question 12: After bronchodilator therapy, you record the following PFT data on a 67-year-old male COPD patient who reports frequent exacerbations of his condition: FEV1/FVC = 59%; FEV1 = 44% predicted. You would characterize the stage of the patient's COPD as which of the following?

- A. mild
- B. moderate
- C. severe
- D. very severe

- Answer: C

Explanation: Irreversible airflow obstruction is present when the FEV1/FVC ratio after bronchodilator treatment is less than 70% of predicted. The stage of COPD is then gauged by its impact on the predicted FEV1. If the FEV1 is < 50% but ≥ 30% of the patient's predicted value and there is a history of repeated exacerbations, the stage is classified as severe.

Question 13: While performing spirometry on a patient, they suddenly complain to you of severe shortness of breath and some chest pain. Which of the following actions would you recommend at this time?

- A. Call a “code blue”
- B. Call your manager
- C. Decrease the treadmill incline
- D. Terminate the procedure, monitor the patient and notify the prescribing physician

Answer: D

Explanation: Patient responses that justify terminating pulmonary function testing and close patient monitoring include moderate to severe angina; increasing nervous system symptoms such as ataxia, dizziness, or near-syncope; signs of poor perfusion, such as cyanosis or pallor; severe wheezing or dyspnea

Question 14: A key characteristic of all obstructive disorders is which of the following?

- A. decrease in lung volumes
- B. increase in lung volumes
- C. decrease in flow rates
- D. decrease in work of breathing

Answer: C

Explanation: Whether inspiratory or expiratory in nature, all obstructive disorders are characterized by impedance to the flow of air. In the pulmonary function laboratory, this flow impedance always is seen as a DECREASE in flows, as measured during the applicable phase of breathing. If the problem is mainly expiratory obstruction, expiration time is usually prolonged beyond that of inhalation, with contraction of the upper abdomen often evident toward the end of exhalation.

Question 15: A patient with a history of nocturnal dyspnea has a FEV1 of 1.5 L before bronchodilator therapy and a FEV1 of 1.8 L fifteen minutes after treatment. These results indicate that the patient has which of the following?

- A. has airway obstruction that is unresponsive to treatment
- B. is suffering from a combined obstructive and restrictive disorder
- C. has at least partially reversible airway obstruction
- D. is developing tolerance to the bronchodilator

Answer: C

Explanation: The percent change in the FEV1 is +20% ([1.8 – 1.5]/1.5 = 0.3/1.5 = .20 = 20%). An increase in FEV1 of more than 12-15% between pre- and post-bronchodilator therapy indicates the presence of at least partially reversible airway obstruction.

Question 16: Which of the following spirometry tests would you recommend to evaluate the severity of an obstructive lung disorder?

- A. forced vital capacity
- B. inspiratory capacity
- C. tidal volume
- D. expiratory reserve volume

Answer: A

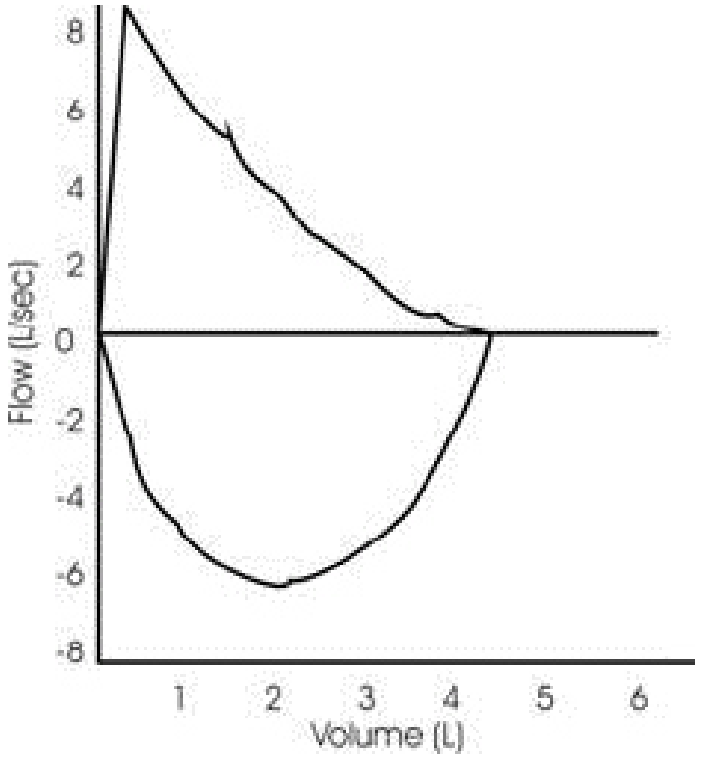
Explanation: Because obstructive disorders limit airflow, the only measure listed that would help assess the severity of the condition would be the forced vital capacity (including its time components, e.g., FEV1, FEV3). Typically an FEV1/FVC ratio < 70% defines an obstructive ventilatory impairment. With the exception of the RV and TLC (increased in air-trapping) simple lung volumes such as the VT or IC are not useful in assessing the severity of obstructive disorders.

Question 17: Which of the following diagnoses is consistent with the following flow-volume curve

- A. Variable intrathoracic obstruction
- B. Fixed extrathoracic obstruction
- C. Small airway obstruction
- D. Normal expiratory and inspiratory flow

- Answer: D

- Explanation: In a flow-volume loop, the lower portion represents inhalation and the top portion depicts exhalation. In this example, there is a rapid acceleration to a normal peak expiratory flow and a steady decrease in expiratory flow to a normal volume. Inspiration has a normal, symmetrical shape.

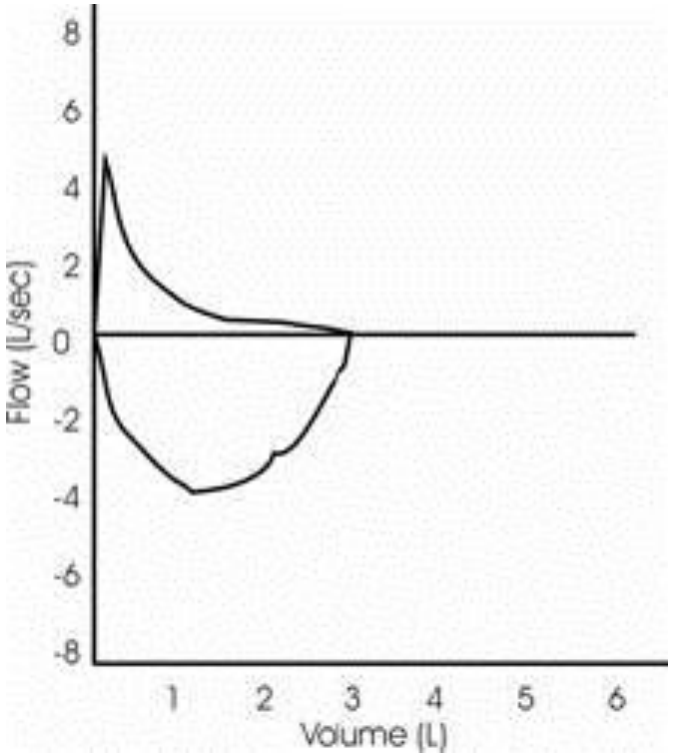


Question 18: Which of the choices below is consistent with the following flow-volume?

- A. Normal forced expiratory flow pattern
- B. Variable intrathoracic obstruction
- C. Airways obstruction
- D. Fixed large airway obstruction

- Answer: C

- Explanation: In a flow-volume loop, the lower portion represents inhalation and the top portion depicts exhalation. In this example, there is peak expiratory flow is lower than normal and the expiratory flow is “notched out” and ends at a lower volume indicating an obstructive disorder.



Question 19: Which of the following would be considered key components of the FVC maneuver?

A. Maximal inspiration, blast of expiration, and complete exhalation

B. Maximal inspiration and exhalation for at least 6 seconds

C. Forceful exhalation, exhalation for at least 6 seconds in adults and 3 seconds in children younger than the age of 10

D. No cough in the first second and a fast start (back extrapolation <150 mL)

Answer: A

Explanation: Key components of the FVC maneuver include a blast of expiration, and complete exhalation after a maximal inhalation.

Question 20: DLCO measurements may be indicated to evaluate gas exchange abnormality in which of the following?

A. Ketoacidosis

B. Myasthenia gravis

C. Interstitial lung disease

D. Bronchitis

Answer: C

Explanation: Diffusion defects are not generally seen in ketoacidosis, myasthenia gravis and bronchitis. However, interstitial lung disease is characterized by lower volumes and a diffusion defect. DLCO is indicated to measure diffusion defect and would be indicated in this case, along with measurements of volumes/capacities which would likely also be decreased along with flow which would often be normal or slightly increased.

Question 21: Which of the following bedside measurements require a conscious and cooperative patient?

- A. spontaneous respiratory rate
- B. maximum expiratory pressure
- C. spontaneous tidal volume
- D. maximum inspiratory pressure

Correct Answer: B

Explanation: Vital capacity and maximum expiratory pressure measurements require that the patient be conscious and cooperative. Assuming there is spontaneous breathing present you could measure an unconscious patient's spontaneous respiratory rate and tidal volume (and minute volume), as well as the maximum inspiratory pressure (using a one-way valve system).

Question 22: When performing spirometry on an adult patient, which of the following would indicate invalid/unacceptable test results?

- A. back extrapolated volume 300 mL
- B. time to peak flow 100 msec
- C. forced expiratory time > 6.0 sec
- D. repeat FVCs match within 150 mL

Correct Answer: A

Explanation: Validity checks recommended to ensure a valid patient effort include: (1) a back extrapolated volume < 150 mL; (2) a time to peak expiratory flow < 120 msec; (3) a forced expiratory time > 6.0 seconds with the change in exhaled volume during the last 0.5 sec of the maneuver < 100 mL; and (4) all repeat FEV6 values matching within 150 mL.

Question 23: Following an initial open-circuit multiple-breath nitrogen washout technique, if another test must be performed, how long should the technologist wait before beginning the additional test?

A. 5 minutes
B. 10 minutes
C. 15 minutes
D. 20 minutes

Correct Answer: C

Explanation: At least one technically satisfactory test should be done. If additional washouts are performed, a waiting period of at least 15 minutes is recommended to allow normal concentrations of N2 to be reestablished in the lungs, blood, and tissues.

Question 24: In healthy adults, what is the range of the RV/TLC ratio?

- A. 10% to 25%
- B. 20% to 35%
- C. 30% to 45%
- D. 50% to 65%

Correct Answer: B

Explanation: In healthy adults, the RV/TLC ratio may vary from 20% in young adults to 35% in older patients.

Question 25: During a single-breath nitrogen washout test what does phase II include?

A. Mixed dead space gas in which the relative concentrations of O2 and N2 change abruptly as the anatomic dead space volume is expired.
B. An abrupt increase in the concentration of N2 that continues until RV is reached.
C. A plateau caused by the exhalation of alveolar gas in which relative O2 and N2 concentrations change slowly and evenly.
D. Upper airway gas from the anatomic dead space, consisting of 100% O2.

Correct Answer: A

Explanation: Phase I: Upper airway gas from the anatomic dead space (V_{Danat}), consisting of 100% O_2. Phase II: Mixed dead space gas in which the relative concentrations of O_2 and N_2 change abruptly as the V_{Danat} volume is expired. Phase III: A plateau caused by the exhalation of alveolar gas in which relative O_2 and N_2 concentrations change slowly and evenly. Phase IV: An abrupt increase in the concentration of N_2 that continues until RV is reached.

Question 26: Why should a Valsalva maneuver be avoided during a carbon monoxide diffusing capacity using a single breath-hold technique is being used?

- A. Reduction in pulmonary capillary blood volume and may produce a falsely low DLCO
- B. Reduction in pulmonary capillary blood volume and may produce a falsely high DLCO
- C. Increase in pulmonary capillary blood volume and may produce a falsely low DLCO
- D. Increase in pulmonary capillary blood volume and may produce a falsely high DLCO

Correct Answer: A

Explanation: A Valsalva maneuver reduces pulmonary capillary blood volume and may produce a falsely low DLCO.

Question 27: Which of the following is the term used to describe the pressure developed during the first tenth of a second when the airway is blocked?

A. 1/10 P
B. P10%
C. P0.1
D. P%Raw

Correct Answer: C

Explanation: The output of the central respiratory centers is also sometimes measured as the pressure developed during the first tenth of a second when the airway is blocked (P100 or P0.1).

Question 28: During an open-circuit or rebreathing technique to measure ventilatory response for carbon dioxide and oxygen, what is the concentration range of oxygen?

A. 12% to 20%
B. 22% to 30%
C. 32% to 40%
D. 42% to 50%

Correct Answer: A

Explanation: Open-circuit technique. The patient breathes gas mixtures containing O_2 concentrations from 12% to 20% to which CO_2 is added to maintain alveolar PCO_2 ($PaCO_2$) at a constant level.

Question 29: What is the term used to describe a test designed to simulate high altitude in a subject susceptible to hypoxia when travelling to high elevation?

A. High pressure simulation test
B. Hypoxia inhalation test
C. Decompression test
D. Hyperbaric inhalation test

Correct Answer: B

Explanation: A high-altitude simulation test (HAST), also known as a hypoxia inhalation test (HIT), is used to emulate high altitude in subjects susceptible to hypoxia during air travel or travel to high elevation (i.e., COPD, pulmonary fibrosis).

Question 30: In exercise stress testing, when does anaerobic threshold occur?

A. When energy demands of the resting muscles exceed the body's ability to produce energy by aerobic metabolism.
B. When energy demands of the exercising muscles exceed the body's ability to produce energy by aerobic metabolism.
C. When energy demands of the exercising muscles exceed the body's ability to produce energy by anaerobic metabolism.
D. When energy demands of the resting muscles exceed the body's ability to produce energy by anaerobic metabolism.

Correct Answer: B

Explanation: Measurement of and the analysis of exhaled gases during exercise allow a noninvasive estimate of the anaerobic threshold (AT). This threshold is also termed the ventilatory threshold when it is denoted by a change in ventilation and CO2 production. The AT occurs when the energy demands of the exercising muscles exceed the body's ability to produce energy by aerobic metabolism.

Question 31: What is the normal oxygen consumption level in a healthy adult?

A. 35 mL O2/min/kg
B. 0.35 mL O2/min/kg
C. 25 L/min (STPD)
D. 0.25 L/min (STPD)

Correct Answer: D

Explanation: Healthy patients at rest have a VO2 of approximately 0.25 L/min (STPD) or approximately 3.5 mL O2/min/kg (1 MET).

Question 32: You are performing a 6MWT on a 71-year-old male patient. The patient pauses to rest. How is the time be noted?

a. The time should be paused as the patient rests then resumed when he restarts.
b. The time rested is added to the end of the six minutes and he will be asked to keep walking.
c. The timer continues to run during any pause during the test.
d. Pauses are not allowed, and the test will need to be performed later.

Correct Answer: C

Explanation: The objective of the test is to have the patient walk as far as possible in 6 minutes. The patient should be encouraged throughout the test, and it is recommended that standard phrases be used to reduce intra-tester and test-to-test variability. It should be emphasized that the timer continues to run during any pause during the test.

Question 33: Which of the following is the term used to describe the methacholine concentration at which there is a 20% decrease in FEV1 in bronchial provocation testing?

A. FEV20%
B. PC20
C. MC20
D. FEV1–20

Correct Answer: B

Explanation: Spirometry and sometimes sGaw are measured after each dose. Most clinicians consider the test result positive when inhalation of methacholine precipitates a 20% decrease in FEV1. The methacholine concentration at which this 20% decrease occurs is called the provocative concentration (PC20). If the accumulative dose is measured, it would be termed the provocative dose (PD20).

Question 34: What is the most likely cause of a decreased MIP in a patient with emphysema?

A. Post-polio syndrome
B. Hyperinflation
C. Kyphoscoliosis
D. Phrenic nerve damage

Correct Answer: B

Explanation: MIP may also be decreased in patients with hyperinflation as in emphysema where the diaphragm is flattened by the increased volume of trapped gas in the lungs.

Question 35: Why is preoperative pulmonary testing performed?

A. As part of the insurance preapproval process
B. To evaluate a patient's risk of developing chronic lung disease prior to surgery
C. To rule out existing pneumonia
D. To evaluate surgical candidates at risk for developing respiratory complications

Correct Answer: D

Explanation: Preoperative pulmonary function testing is one of several means available to clinicians to evaluate surgical candidates at risk for developing respiratory complications. They are also used to risk-adjust for comparing outcomes among various service providers.

Question 36: What is the term used to describe any known test signal for an instrument that can be used to determine its accuracy and precision of PFT equipment?

A. Calibration
B. Standard
C. Correction factor
D. Control

Correct Answer: D

Explanation: A control is any known test signal for an instrument that can be used to determine its accuracy and precision.

Question 37: What is the most common technique for analyzer calibration?

A. Single-point calibration
B. Two-point calibration
C. Multiple-point calibration
D. Control-point calibration

Correct Answer: B

Explanation: The most common technique for analyzer calibration, two-point calibration, involves introducing two known gases.

Question 38: How is the lower limit of normal established in PFTs?

A. By analyzing a measure in a subject when they are healthy and comparing it to that measurement when they are sick

B. By analyzing a healthy family measure of the subject and determining the variability of that measurement

C. By analyzing a measure in sick subjects and determining the variability of that measurement

D. By analyzing a measure in healthy subjects and determining the variability of that measurement

Correct Answer: D

Explanation: Determining the lower limit of normal (LLN) should be done by analyzing some measure (e.g., FVC, FEV1) in healthy subjects and determining the variability of that measurement. In clinical medicine, the fifth percentile is often defined as the LLN because it represents the segment of healthy subjects farthest below the average. Even though subjects in the fifth percentile are healthy, they are arbitrarily defined as “abnormal” for clinical purposes.

Question 39: Which of the following FEV1 % prediction indicates moderately severe obstruction?

A. >70%
B. 60% to 69%
C. 50% to 59%
D. 35% to 49%

Correct Answer: C

Explanation:

Grading Severity of PFT Parameters

*Spirometry $FEV_1/FVC < LLN$	FEV_1 % Pred
Mild obstruction	> 70%
Moderate obstruction	60% to 69%
Moderately severe obstruction	50% to 59%
Severe obstruction	35% to 49%
Very severe obstruction	< 35%
**Lung Volumes $FEV_1/FVC \geq LLN$	TLC % Pred
Mild restriction	< LLN but > 70%
Moderate restriction	< 70 and > 60%
Moderately severe restriction	< 60%
*Dlco	Dlco % Pred
Mild	> 60% and < LLN
Moderate	40% to 60%
Severe	< 40%

Question 40: According to the ATS-ERS Task Force which of the following suggests moderate severity based on FEV1?

A. FEV1 < 35% predicted
B. FEV1 = 35% to 49% predicted
C. FEV1 = 50% to 59% predicted
D. FEV1 = 60% to 69% predicted

Correct Answer: D

Explanation:

Grading Severity of PFT Parameters

*Spirometry $FEV_1/FVC < LLN$	FEV_1 % Pred
Mild obstruction	> 70%
Moderate obstruction	60% to 69%
Moderately severe obstruction	50% to 59%
Severe obstruction	35% to 49%
Very severe obstruction	< 35%
**Lung Volumes $FEV_1/FVC \geq LLN$	TLC % Pred
Mild restriction	< LLN but > 70%
Moderate restriction	< 70 and > 60%
Moderately severe restriction	< 60%
*Dlco	Dlco % Pred
Mild	> 60% and < LLN
Moderate	40% to 60%
Severe	< 40%

Exam Candidates: Preparing Your Body and Mind

- What to do
  - Pace yourself in preparing—min. 1-2 month in advance.
  - Encourage your peers to start a study group.
  - Become familiar with the exam matrix.
  - Test practice exam and questions.
  - Get enough rest in advance.
  - You'll be nervous, but this test does not define your life!

Preparing Your Body and Mind

- What NOT to do
  - Underestimate the exam
  - Get overly nervous
  - Place too much pressure on yourself
  - Party the night before

Day or two before the Exam

- Know the location. Take a practice run if you need to.
- Understand the exam parameters.
  - Number of questions.
  - Time allotted.
- Review the NBRC website for mechanical issues
  - Screen layout-How to make an unanswered question
- Ensure you have proper identification.
- Don’t rely on unreliable people

Test-taking Strategies

- Multiple choice exam, so the right answer is there! Recognition is generally easier than fill-in or essay.
- The get psyched out if the first few questions are hard. They may do this on purpose to shake you.
- Don’t change your answer unless you have mis-read the question/answer or identified an obvious (mathematical) error.
- Don’t spend too much time on one question. You can go back and answer it later.

Test-taking Strategies

- If you don’t know the right answer, try to identify wrong ones, or outliers.
  - At least eliminate them.
  - Turn a 25% chance into a 33% or 50% chance.
- If you don’t know, generally your first inclination is more often correct than the answer you change it to.
- Corollary: If you don’t know the answer but have a hunch, go with that choice. Often your first hunch is correct, provided you have studied
- If you don’t know all of the information in a question (e.g. normal electrolyte or CBC values) focus on what you do know. Many times, just like in a clinical setting, you often don’t have all of the information but make recommendations on what you do know.

Take Home Messages

- Knowledge is empowerment.
- Education and credentials are pathways to knowledge.
- The CPFT and RPFT are two such credentials which can empower and open doors for the future.
- However, they are tough exams and require a strategy and hard work to succeed.
- Simply put, becoming proficient at performing and interpreting PFTs takes time and effort.
- There are many resources available and those seeking these credentials should use them.

Selected Resources

- Mottran, CD, **Ruppels's Manual of Pulmonary Function Testing – ed** 12th, 2022.
- NBRC.org
- Kacmarek, RM, Stoller, J & Heuer AJ, ***Egan's Fundamentals of Respiratory Care***, ed 12th ed, 2021.
- Heuer, AJ, ***Clinical Assessment in Respiratory Care***, ed 8, 2022.
- Kettering.org