NMES Electrotherapy Practice Test (Sample)

Study Guide

Everything you need from our exam experts!

Table of Contents

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

1. Which statement defines the CAR deficit threshold?

A. CAR deficit is defined when CAR < 0.90

B. CAR deficit is defined when CAR < 0.95

C. CAR deficit is defined when CAR < 1.00

D. CAR deficit is defined when CAR < 0.85

2. In the lumbar paraspinal NMES setup, how is the pelvis positioned?

A. Pelvis strapped to the table in neutral

B. Pelvis strapped to the table in PPT

C. Pelvis loose

D. Pelvis strapped in standing position

3. NMES activates sensory and motor fibers. What should you educate your patient about?

A. Tingling sensation precedes motor twitch

B. Immediate full contraction with no sensation

C. Painful activation occurs first

D. No sensory feedback occurs

4. In Russian stimulation, what is a 'burst'?

A. A single tone

B. Packages of frequency

C. Continuous wave

D. Random pattern

5. How should electrodes be aligned relative to the muscle?

A. Parallel

B. Perpendicular

C. Diagonal

D. Circular

6. Why is the pulse duration range for DF assist set to 200-350 microseconds?

- **A. Because 100 is the lower end**
- **B. Because 200 is when motor unit recruitment starts**
- **C. Because 350 is the upper bound**
- **D. Because 150 is typical**

7. How can you recruit more motor units electrically?

- **A. Increase electrode size**
- **B. Increase phase charge by increasing amplitude and/or pulse duration**
- **C. Increase frequency only**
- **D. Shorten pulse duration**

8. Which statement about typical FES usage best reflects practice?

- **A. FES may be on longer and at a lower frequency to minimize fatigue.**
- **B. FES must always be on short bursts.**
- **C. FES outputs higher peak current than NMES.**
- **D. FES is never used for gait assistance.**

9. In the NMES strengthening setup for the rotator cuff, which arm position is described?

- **A. Forearm on pillow with elbow flexed**
- **B. Arm belted to body with elbow at 90 degrees in sitting**
- **C. Arm overhead with elbow extended**
- **D. Arm by side with elbow flexed 30 degrees**

10. If a patient cannot tolerate NMES, which general strategies and specific adjustments are recommended?

- **A. General: education/motivation; put patient in control; increase frequency for comfort; Specific: increase ramp time; increase rest time**
- **B. General: reduce frequency; No rest time; Specific: remove ramp**
- **C. Increase intensity to maximum**
- **D. Do not adjust therapy**

Answers

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

Explanations

1. Which statement defines the CAR deficit threshold?

A. CAR deficit is defined when CAR < 0.90

B. CAR deficit is defined when CAR < 0.95

C. CAR deficit is defined when CAR < 1.00

D. CAR deficit is defined when CAR < 0.85

The idea behind a CAR deficit threshold is to flag impairment only when the CAR value falls below a reasonable cutoff, reflecting a response that is notably worse than predicted but still accounting for normal variability. Setting the threshold at 0.95 means that if the CAR is at or above 95% of the predicted/normal level, function is considered adequate; once it drops below 0.95, a deficit is indicated. This strikes a balance between catching true deficits and avoiding false positives from small measurement fluctuations. If the threshold were higher, like 1.00, even tiny deviations would be labeled as deficits, which isn't practical. If it were much lower, like 0.85, milder deficits could be missed. Values around 0.95 are chosen because they reflect a meaningful drop without overreacting to normal variability. So, the statement defining the CAR deficit is that CAR is considered deficient when CAR < 0.95.

2. In the lumbar paraspinal NMES setup, how is the pelvis positioned?

A. Pelvis strapped to the table in neutral

B. Pelvis strapped to the table in PPT

C. Pelvis loose

D. Pelvis strapped in standing position

Stabilizing and aligning the pelvis is essential for effective lumbar paraspinal NMES. In this setup, the pelvis is strapped to the table and positioned in a posterior pelvic tilt. Securing the pelvis prevents movement from the hips or pelvis during stimulation, which helps keep the current path focused on the lumbar paraspinals rather than spreading to other muscles. The posterior tilt also flattens the lumbar curve, putting the spine in a position that makes the paraspinal muscles more consistently reachable by the electrical field and reduces compensatory movements. If the pelvis were loose or the patient stood, pelvic motion or changes in spinal alignment could shift the stimulation target, increase unwanted muscle recruitment, and reduce comfort and effectiveness. Strapping with a posterior tilt offers stable, repeatable conditions for delivering NMES to the lumbar paraspinals.

3. NMES activates sensory and motor fibers. What should you educate your patient about?

A. Tingling sensation precedes motor twitch

B. Immediate full contraction with no sensation

C. Painful activation occurs first

D. No sensory feedback occurs

When NMES is used, sensory fibers respond at a lower electrical threshold than motor fibers. So as you gradually increase the current, the patient usually feels a comfortable tingling under the electrodes before the muscle begins to twitch. This sequence is something you should educate the patient about: expect sensation first, then movement, and the sensation should never be painful. If pain is felt before any contraction, that's a sign to lower the intensity or adjust electrode placement. If there's no sensory feel at all but you do see a contraction, check for skin impedance or electrode contact. This approach helps patients know what to expect and stay within safe, comfortable limits.

4. In Russian stimulation, what is a 'burst'?

A. A single tone

B. Packages of frequency

C. Continuous wave

D. Random pattern

In Russian stimulation, energy is delivered as bursts: short trains of high-frequency pulses grouped together and then repeated at a lower rate. Each burst acts as a package of energy, containing many rapid pulses at the carrier frequency, and these bursts are turned on and off in quick succession to produce a rhythmic muscle contraction. This bursting pattern is what creates the contraction while keeping the sensation more comfortable than a continuous high-frequency current. So, describing bursts as packages of frequency captures the idea that the high-frequency pulses come in finite groups rather than as a continuous, unbroken wave.

5. How should electrodes be aligned relative to the muscle?

A. Parallel

B. Perpendicular

C. Diagonal

D. Circular

In NMES, electrode orientation matters because the electrical field should run along the muscle fibers to recruit motor units efficiently. When the electrodes are placed parallel to the direction of the muscle fibers, the current travels along the length of the muscle, allowing deeper, more uniform activation of the motor units and producing a stronger, steadier contraction with usually less skin discomfort. Placing electrodes perpendicular often targets superficial fibers and can lead to less effective recruitment and more localized sensation. Diagonal or circular placements don't align with the fiber direction, which makes the stimulation less predictable and efficient. So, you want the electrodes aligned parallel to the muscle fibers. For example, on a biceps, position them along the long axis of the muscle.

6. Why is the pulse duration range for DF assist set to 200-350 microseconds?

A. Because 100 is the lower end

B. Because 200 is when motor unit recruitment starts

C. Because 350 is the upper bound

D. Because 150 is typical

The key idea is how pulse duration affects motor unit recruitment in NMES. When you deliver a pulse, the amount of charge per pulse depends on both current and duration. Very short pulses (like 100 µs) often don't recruit motor axons effectively, so you get little or no functional contraction. Around 200 µs, motor units begin to be recruited reliably, producing a visible dorsiflexion when the stimulus is set with appropriate amplitude. Extending the duration toward 350 µs increases the strength of the contraction but also raises the sensation and charge delivered, so 200–350 µs is used to start recruiting motor units reliably while staying within a comfortable, safe range. Other numbers don't directly reflect the threshold at which motor units begin to respond, which is why the explanation centers on 200 µs as the onset of motor unit recruitment.

7. How can you recruit more motor units electrically?

A. Increase electrode size

B. Increase phase charge by increasing amplitude and/or pulse duration

C. Increase frequency only

D. Shorten pulse duration

In electrical stimulation, the number of motor units that are recruited is driven by the amount of charge delivered with each pulse. The phase charge equals the current amplitude times the pulse duration. Delivering more charge per pulse means more axons reach their excitation threshold, so more motor units are recruited and a stronger contraction results. Increasing amplitude or lengthening the pulse duration directly increases that phase charge, which is why this is the best way to recruit more motor units. Frequency, on the other hand, changes how often the recruited motor units fire (the rate of contraction) rather than how many are recruited. Shorter pulse durations deliver less charge and recruit fewer units, while longer durations or higher amplitudes that stay within safety limits raise recruitment. Electrode size can influence current density and spread, but the fundamental lever for recruiting more motor units is increasing the phase charge. Remember to stay within recommended safety limits for charge per phase and charge density.

8. Which statement about typical FES usage best reflects practice?

A. FES may be on longer and at a lower frequency to minimize fatigue.

B. FES must always be on short bursts.

C. FES outputs higher peak current than NMES.

D. FES is never used for gait assistance.

The key idea is managing fatigue when using functional electrical stimulation during a functional task like walking. In practice, FES for gait is tuned to keep the muscle engaged long enough to support the movement, but not so intensely that fatigue accumulates quickly. Using a lower frequency reduces the rate of motor-unit firing and metabolic demand, while a longer on-time helps the muscle stay active through the part of the gait cycle where it's needed. This combination—longer active periods at a lower frequency—lets the device assist the movement without fatiguing the muscle rapidly. That's why this option fits best: it reflects the approach of sustaining functional contraction over time with minimized fatigue. The other statements don't align with typical gait-focused FES practice—FES isn't limited to short bursts, it doesn't inherently require higher peak current than NMES, and it is commonly used for gait assistance.

9. In the NMES strengthening setup for the rotator cuff, which arm position is described?

A. Forearm on pillow with elbow flexed

B. Arm belted to body with elbow at 90 degrees in sitting

C. Arm overhead with elbow extended

D. Arm by side with elbow flexed 30 degrees

Stabilizing and aligning the shoulder so the rotator cuff is targeted, not substituted, is the main idea here. When you're performing NMES strengthening for the rotator cuff, you want the arm held in a position that minimizes movement from the deltoid or trunk and keeps the shoulder in a consistent, functional alignment. This helps the electrical stimulation recruit the cuff muscles more specifically and allows for meaningful strengthening. The described setup does exactly that: the arm is belted to the body, providing solid stabilization so the shoulder blade and arm don't translate or rotate during the treatment. Keeping the elbow at 90 degrees in a sitting position places the arm in a favorable plane that reduces gravitational pull and maintains a stable lever for the cuff to work, while still allowing accessible electrode placement over the rotator cuff muscles. This combination helps isolate the targeted muscles and improves the effectiveness of the NMES session. Other positions tend to allow compensatory movements or place the arm in less optimal mechanics. For example, moving the forearm or letting the arm travel overhead can engage additional muscles or create awkward leverage, reducing RC isolation. An arm by the side with a small elbow bend likewise doesn't provide the same stable, scapular-aligned setup.

10. If a patient cannot tolerate NMES, which general strategies and specific adjustments are recommended?

A. General: education/motivation; put patient in control; increase frequency for comfort; Specific: increase ramp time; increase rest time

B. General: reduce frequency; No rest time; Specific: remove ramp

C. Increase intensity to maximum

D. Do not adjust therapy

When a patient cannot tolerate NMES, the focus is on making the experience more tolerable through patient engagement and gradual, patient-friendly adjustments. Giving the patient education and motivation helps them understand what to expect and stay engaged with the therapy, which reduces anxiety and increases cooperation. Putting the patient in control—allowing them to participate in decisions about when to start or stop and how to progress—helps them feel empowered and more willing to tolerate the sensations. For concrete parameter changes, extending the ramp time is a practical way to ease into stimulation. A slower ramp means the intensity builds up gradually rather than jumping to a higher level, which reduces the abruptness of the sensation and helps the patient adapt more comfortably. Increasing rest time between stimulation bursts also supports tolerability by giving the skin and muscles a longer recovery window, reducing fatigue and soreness that can drive intolerance. The idea that adjusting frequency could help comfort is also used in practice, but it's more individualized. Some patients find certain frequencies more tolerable than others, so frequency can be tweaked as part of the overall strategy to improve comfort. Strategies that would cut the therapy short or push the patient to intolerance—such as jumping to higher intensity, removing ramp, eliminating rest, or not adjusting anything—do not address the root issues of discomfort and fatigue and are unlikely to improve tolerability.

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://nmeselectrotherapy.examzify.com

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