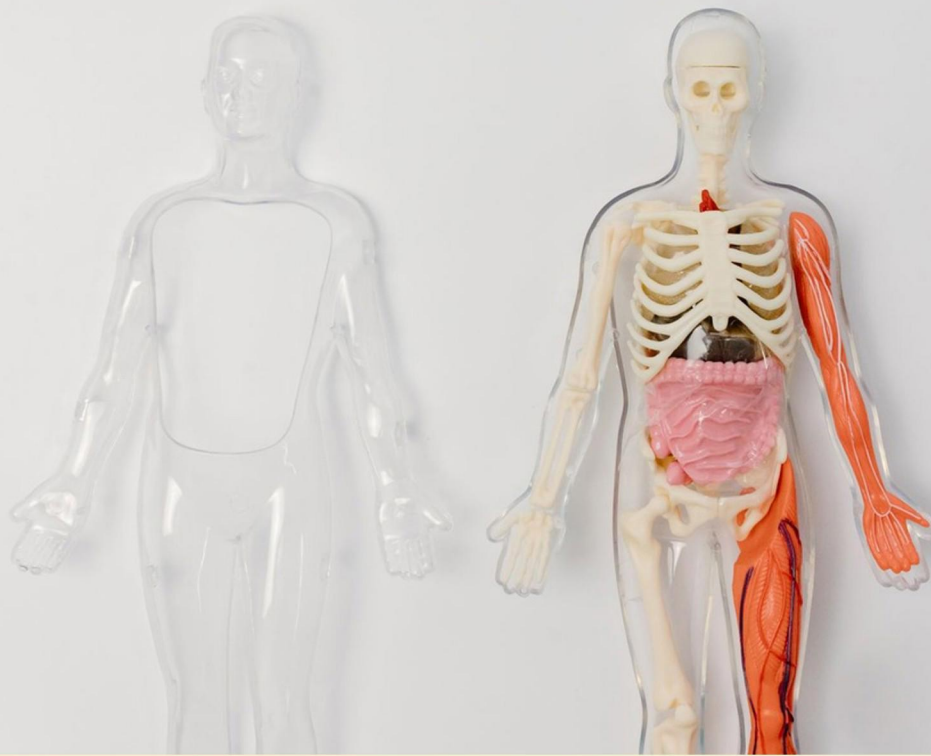


MOVEMENT SCIENCE MIDTERM PRACTICE TEST (SAMPLE)

STUDY GUIDE



SAMPLE STUDY GUIDE WITH LIMITED QUESTIONS

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THE FULL VERSION STUDY GUIDE

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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. Which pattern is a common dysfunctional lower-body pattern that leads to lumbar compensation during multi-segmental flexion?**
 - A. Thoracic rigidity
 - B. Hip flexor tightness
 - C. Ankle dorsiflexion restriction causing knee valgus in ODS
 - D. Limited hip mobility leading to lumbar compensation during MSF
- 2. Which segment is primarily focused on to control movement in the wall angle before arm motion?**
 - A. Shoulder girdle stability
 - B. Elbow alignment
 - C. Scapula
 - D. Wrist neutral
- 3. Which ligament slows the last few degrees of positive X (flexion)?**
 - A. Anterior Longitudinal Ligament
 - B. Alar Ligament
 - C. Ligamenta Flava
 - D. Posterior Longitudinal Ligament
- 4. For translation, the horizontal or transverse plane translates along the**
 - A. X-axis
 - B. Z-axis
 - C. W-axis
 - D. Y-axis
- 5. During spinal extension, what happens to the annulus?**
 - A. Posterior compression and anterior tension
 - B. Anterior compression and posterior tension
 - C. Posterior tension and anterior compression
 - D. No change

- 6. As the right innominate moves anteriorly/superiorly, the sacral base moves**
- A. anteriorly/inferiorly
 - B. medially
 - C. lateral
 - D. posteriorly/superiorly
- 7. During movement screening, which observations are noted?**
- A. Smoothness, Symmetry, and Pain During Movement
 - B. Heart Rate Response
 - C. Muscle Length Only
 - D. Joint Alignment Only
- 8. Which muscle assists in maintaining the longitudinal arch of the foot?**
- A. Peroneus longus
 - B. Tibialis anterior
 - C. Flexor digitorum longus
 - D. Gastrocnemius
- 9. During spinal extension, the central canal narrows.**
- A. Narrows
 - B. Widens
 - C. Stays the same
 - D. Not affected
- 10. During the backward-lean test with arms overhead, which movement pattern is evaluated?**
- A. Spinal flexion
 - B. Cervical extension
 - C. Posterior chain tightness
 - D. Multi segmental extension

Answers

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

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Explanations

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1. Which pattern is a common dysfunctional lower-body pattern that leads to lumbar compensation during multi-segmental flexion?

- A. Thoracic rigidity
- B. Hip flexor tightness
- C. Ankle dorsiflexion restriction causing knee valgus in ODS

D. Limited hip mobility leading to lumbar compensation during MSF

When moving through forward bending with multiple body segments, the hips, pelvis, and spine need to work together rather than letting the lumbar spine carry most of the load. If hip mobility is limited, the pelvis can't rotate or tilt adequately to allow the hip joints to flex as needed. As a result, the lumbar spine ends up taking more of the motion to reach the same end range. This pattern—limited hip mobility that causes the lumbar to compensate during multi-segmental flexion—is a common lower-body dysfunction that shows up as excessive lumbar motion during MSF. Think of it as a redistribution of effort: healthy MSF relies on the hips contributing to flexion, with the spine staying relatively neutral or moving only as needed. When the hips are stiff, the spine must bend more, which can lead to low-back strain over time. Addressing hip mobility and teaching a proper hip hinge helps move the demand away from the lumbar spine. The other possibilities touch on related issues but don't capture the most direct mechanism. Thoracic rigidity involves the upper back rather than a lower-body limitation. Hip flexor tightness can influence pelvic position and lumbar curvature, but the key driver for lumbar compensation during MSF is limited hip mobility itself. Ankle dorsiflexion restrictions affecting knee valgus relate more to leg alignment during squats or lunges than to the primary lumbar compensation pattern seen in MSF.

2. Which segment is primarily focused on to control movement in the wall angle before arm motion?

- A. Shoulder girdle stability
- B. Elbow alignment
- C. Scapula**
- D. Wrist neutral

The proximal segment that sets up arm movement from a wall position is the scapula. Positioning and controlling the scapula establishes the foundation for how the shoulder girdle moves, guiding the orientation and clearance of the humerus as you begin the arm motion. When the scapula is stabilized and properly oriented—often with upward rotation, a slight posterior tilt, and externally rotated positioning—it creates the correct wall angle and provides a stable platform for the arm to move without impingement or compensations. The other options involve parts of the chain that either act after the scapula's positioning (elbow alignment, which is downstream) or are broader aspects of the shoulder region (shoulder girdle stability) or distal control (wrist neutral) and do not primarily set the wall angle before the arm moves.

3. Which ligament slows the last few degrees of positive X (flexion)?

- A. Anterior Longitudinal Ligament
- B. Alar Ligament
- C. Ligamenta Flava
- D. Posterior Longitudinal Ligament

End-range forward bending is limited by elastic ligaments that act like springs between the vertebrae. Ligamenta flava are rich in elastin and run between the laminae of adjacent vertebrae. As you flex, they lengthen and become taut in the final degrees of motion, resisting further flexion and helping to pull the spine back toward an upright position. This spring-like behavior is exactly what slows the last little bit of positive flexion. The other ligaments have different primary roles. The anterior longitudinal ligament runs along the front of the spine and mainly resists extension, not end-range flexion. The alar ligaments constrain rotation and side bending at the craniovertebral junction. The posterior longitudinal ligament lies inside the spinal canal along the back of the vertebral bodies and does contribute to limiting flexion, but it isn't the elastic brake that the ligamenta flava provide.

4. For translation, the horizontal or transverse plane translates along the

- A. X-axis
- B. Z-axis
- C. W-axis
- D. Y-axis

Movement within a plane is described by directions that lie in that plane. For the horizontal (transverse) plane, the direction stays at the same height, so the axis used to describe translation in that plane is the one that lies within it. In this coordinate setup, that axis is the Y-axis. The vertical direction is perpendicular to the transverse plane (not used for horizontal translation), and the W-axis isn't part of the standard three-axis system. So translations in the transverse plane are described by the Y-axis.

5. During spinal extension, what happens to the annulus?

- A. Posterior compression and anterior tension
- B. Anterior compression and posterior tension
- C. Posterior tension and anterior compression
- D. No change

During spinal extension, the spine bends backward, which creates a bending moment that loads the disc differently on the two sides. The posterior portion of the annulus fibrosus becomes compressed as the posterior elements move toward each other, while the anterior portion is stretched and put in tension to resist the bending. The lamellae are oriented to handle these opposing forces, so the posterior annulus bears compression and the anterior annulus experiences tension as extension occurs. This pattern is the opposite of flexion, where the posterior annulus is in tension and the anterior in compression. So, the description that matches extension is posterior compression with anterior tension.

6. As the right innominate moves anteriorly/superiorly, the sacral base moves

- A. anteriorly/inferiorly
- B. medially
- C. lateral
- D. posteriorly/superiorly**

At the sacroiliac joint, movement of the innominate and the sacrum occurs in opposite directions to keep the pelvis stable. When the right innominate tilts anteriorly and moves upward (anterior/superior), the sacrum responds by moving in the opposite direction—that is, it counternutates. The base of the sacrum then moves posteriorly, and because the sacrum tilts in this interaction, the base can also appear to shift slightly upward, i.e., superiorly. This opposite motion preserves joint congruency and pelvic mechanics during movement. So, the sacral base moving posteriorly and slightly superiorly fits with the reciprocal relationship at the sacroiliac joint.

7. During movement screening, which observations are noted?

- A. Smoothness, Symmetry, and Pain During Movement**
- B. Heart Rate Response
- C. Muscle Length Only
- D. Joint Alignment Only

Observation of movement quality during screening focuses on how smoothly the movement is executed, whether it is symmetric between sides, and whether pain is produced during the movement. These elements capture neural control, coordination, and potential tissue irritation that influence how safely and effectively someone can perform a task. Heart rate response measures cardiovascular demand, not movement quality. Looking at muscle length or joint alignment alone misses how the body actually coordinates and controls movement in real time, including any compensations or painful reactions.

8. Which muscle assists in maintaining the longitudinal arch of the foot?

- A. Peroneus longus**
- B. Tibialis anterior
- C. Flexor digitorum longus
- D. Gastrocnemius

Dynamic support of the foot's arches comes from how extrinsic muscles act across the sole. The peroneus longus plays a key role by forming a tendon that runs from the fibula, around the outside of the ankle, and under the foot to attach on the base of the first metatarsal and the medial cuneiform. When it contracts, it pulls on the plantar surface of the foot, effectively tensioning the arch and helping to maintain height during weight bearing and push-off. This action supports the longitudinal arch, especially by stabilizing the transverse aspect of the foot and acting as a supportive link across the arch. In contrast, the other muscles listed mainly contribute to movements like dorsiflexion, toe flexion, or plantarflexion without providing the same dynamic arch support. Tibialis anterior primarily dorsiflexes and inverts the foot; flexor digitorum longus flexes the toes and offers some passive arch support but not as directly; gastrocnemius mainly plantarflexes the ankle and contributes to propulsion rather than arch stabilization.

9. During spinal extension, the central canal narrows.

- A. Narrows**
- B. Widens
- C. Stays the same
- D. Not affected

During spinal extension, the back of the vertebrae come closer together and the ligamentum flavum can buckle inward toward the canal. This combination reduces the space available for the spinal cord and nerve roots, so the central canal narrows. This is why symptoms of spinal stenosis often worsen with standing or arching the back and improve when bending forward (flexion), which tends to open up the canal.

10. During the backward-lean test with arms overhead, which movement pattern is evaluated?

- A. Spinal flexion
- B. Cervical extension
- C. Posterior chain tightness
- D. Multi segmental extension**

The test with arms overhead in a backward lean is examining how well the body can extend across multiple segments at once. You're asked to extend the spine through different regions (neck, thoracic, and lumbar) while also allowing hip extension and shoulder positioning as you reach back with the arms. This coordinated, multi-joint extension pattern reflects the integrity and mobility of the entire posterior chain and spine working together. So, the best description of what's being evaluated is multi-segmental extension. It's not focusing on a single area like neck extension alone or the tendency to bend forward (spinal flexion), and while posterior chain tightness could influence how you perform this movement, the test specifically targets the ability to extend across multiple segments rather than just identifying tightness in the posterior chain.

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:

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

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